

MODERN PACKAGING



Miller

JUNE 1955

*IN THIS ISSUE: How soaps and cleansers battle
for supremacy with the package as a weapon*

ADHESIVES *with a challenge!*

better ways to meet today's packaging needs

INCREASING MACHINE SPEEDS



In side seaming flour bags, forming satchel and square bottom gusset bags, a fast breaking, instant bonding National Resyn adhesive steps up production to 250 bags a minute. A thin, fast setting adhesive film holds tight at score points. Shelf leakers and down-time for glue adjustment are eliminated. Waste is ended.

Other uses: in making and sealing cartons, boxes, bags and tubing.

Resisting Hot or Cold Liquids



Synthetic Resyn adhesives seal in hot or cold liquids far more successfully than vegetable or casein base glues. These odorless, emulsion specialties are water resistant. Once set, the bond is stronger than the toughest paper. It withstands long contact with hot or cold liquids without leakage. Bonds are quick tacking, fast drying. Fast machining speeds are possible in making cups, straws and a variety of food containers.



MODERNIZING CASES FROM START TO FINISH In Lap Gluing, Nontear Case Sealing and Combining

Three National specialties are improving the manufacture, fabrication and features of today's corrugated cases. Procedures are simplified. Faster machining speeds are attained. Cartons are stronger, safer, easier to open and better looking.

LAP-LOK is a white, ready-for-use, easy-to-handle corner lap glue. It dries to a clear transparent film, leaving no unsightly squeeze-out. A smooth, safer seal - without jagged and distracting staples - protects housewives and storekeepers when they empty cartons. Corner bonds hold firm in transit. They easily withstand a shearing strain of 50 psi at 150° F. Hot food and summer boxcar temperatures present no problem. Handling is easier for everyone.

SOFT-SEAL, National's top-flap adhesive, makes cartons open with ease. Cartons are safe to ship and store, yet open easily, without mutilating the carton or tearing fingernails. Cartons look clean and trim even when reused in markets as carry-home containers.

DURA-BOND for combining corrugated board is faster than ordinary cornstarch. It gelatinizes more quickly at the point of corrugating. Faster tack results. Board is firmly bonded, not wet, not starved. Viscosity in the circulating system is uniform. Changes in pick-up roll adjustment are unnecessary. Production is faster and uninterrupted.

Imaginative adhesive research created not only these but many other National specialties. In developing and applying adhesives made from every available base, National can select or tailor the exact adhesives needed to do most any packaging and shipping job—*successfully!* For technical service, contact your nearest regional laboratory or office. Write for our helpful booklet, "Successful Case Sealing," free upon request.

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MODERN PACKAGING



SPATTERDASH OF INK COLOR
... ink drum lid photographed
in a Gair Folding Carton Plant.

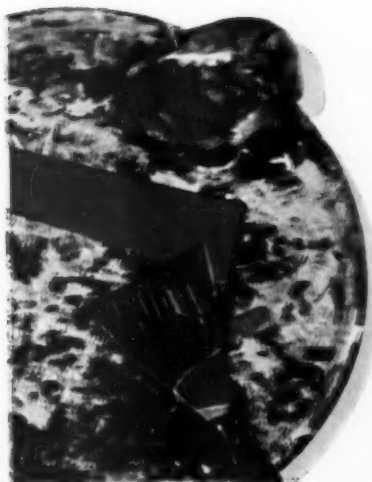
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*Gair Package Analysis is the unique service which blue-prints a successful carton for your product. Your nearest Gair office will be glad to have a representative call. No obligation, naturally.



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JUNE 1955

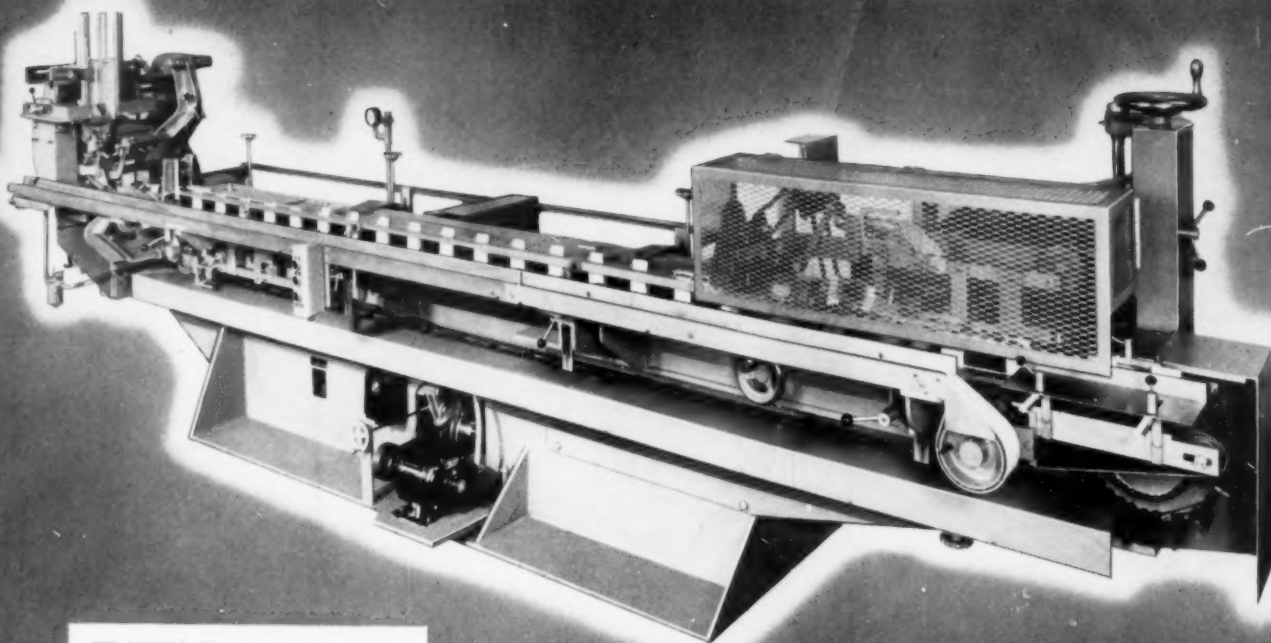
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MODERN PACKAGING is regularly
indexed in *Industrial Arts Index*.



MODERN PACKAGING

Psychoanalysis and you

MOTIVATION RESEARCH, as has been pointed out in these pages, is the current enthusiasm of the market-research boys. It is, basically, the idea of probing into the *why* of consumer buying decisions, beyond the usual who, what and how much.

The idea is certainly sound. But in the current wave of enthusiasm for it there are two great hazards: (1) that, like so many theories that seem to offer a fresh and logical and easy answer to sales problems, it may be exaggerated far beyond its real importance and (2) when it starts probing into Freudian traumas and social nuances it is in danger of passing into the mumbo-jumbo realm of the psychoanalytic fakirs.

So we are indebted to the Assn. of Consulting Management Engineers for wafting a little fresh air into this rather heady atmosphere.

The management consultants are all in favor of motivation research. But, in their *ACME Reporter*, they deplore the present tendency to regard it as "something strange and powerful, like one of the mystery-drug discoveries." Managements, they say, have suddenly become concerned to an almost fantastic degree with what goes on in the minds of those who buy their products. This has gone so far that there has been a tendency to overlook certain very real facts:

1. That most products are still bought primarily on the rational basis of price, quality and performance.

2. That to get a consumer buying decision you must first get the product to the point of purchase, through trade channels that are less concerned with psychology than with hard realities.

3. That the importance of what consumers think, or can be led to think, varies greatly according to the product.

Keeping these basics in mind will help packagers to make intelligent use of what can, for many of them, be a very important new sales tool. For there is no question but what psychological factors, lying far back in the subconscious mind where ordinary research does not penetrate, can be crucial in the kind of buying decision that shoppers must make today when face-to-face with a mass of competing packages.

The Editors

MODERN PACKAGING



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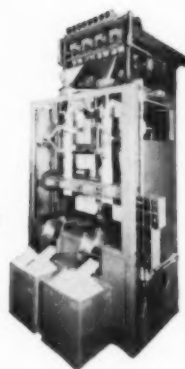
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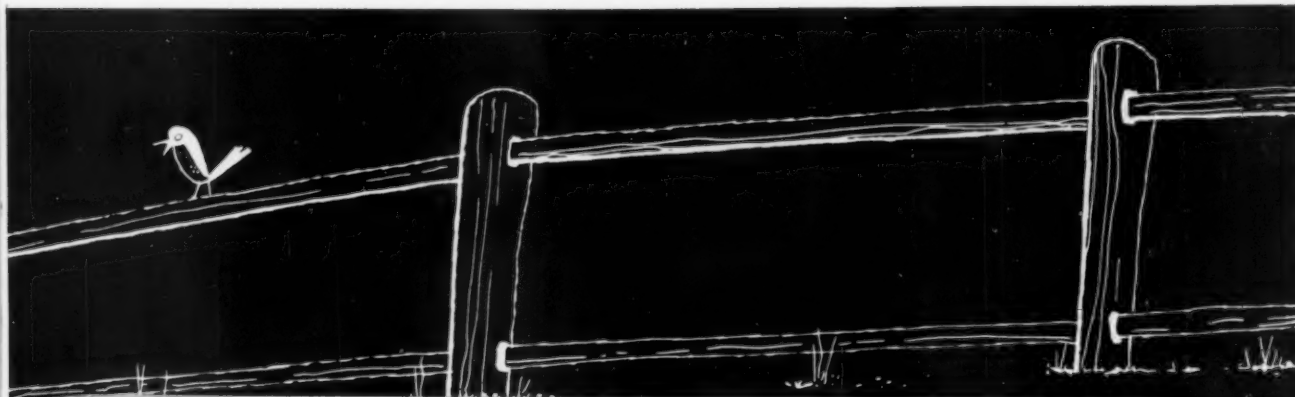
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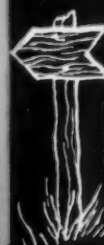


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BEEF STEAKS
BEEF CHOPPED · SHAPED · CUBED



BEEF CHOPPED · SHAPED · CUBED



Ideal for...
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BEEF CHOPPED - SHAPED - CUBED

SUPER BEEF STEAKS



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• SANDWICHES •

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SUPER BEEF STEAKS

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JIFFY'S

SUPER BEEF STEAKS

BEEF CHOPPED - SHAPED - CUBED

DIRECTIONS

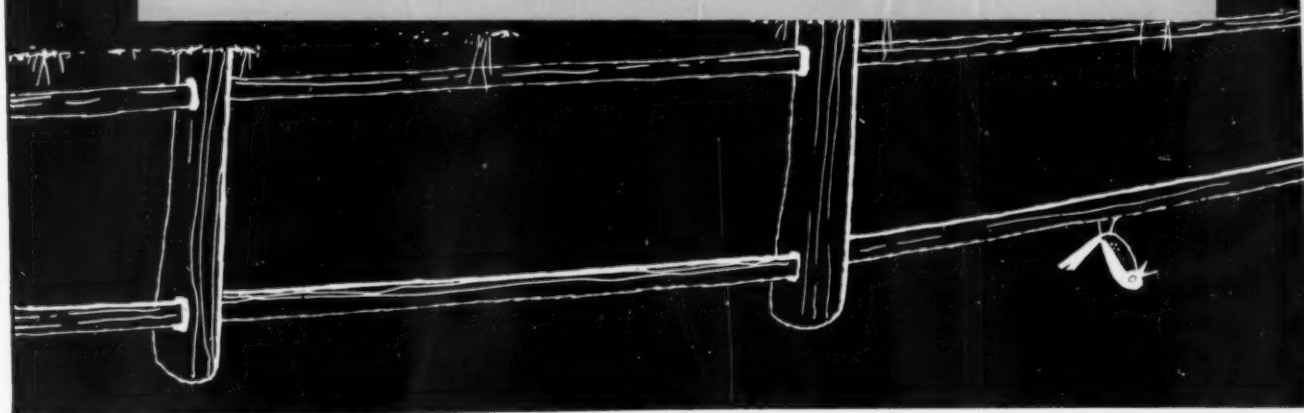
GRILLED STEAK: Fry while frozen on hot lightly greased skillet, or broil. Takes one minute each side. DO NOT OVERCOOK. Do not press. Use spatula so as not to break steak apart.

FOR LUNCHEON: While frozen, dip steak in egg batter, then dust with cracker crumbs, and fry till golden brown in hot fat or on grill. Cook one minute on one side, turn and cook half-minute or until golden brown. Serve on hot buttered roll or bread, or on hot platter with french fries and salad.

BREADED STEAK: While frozen dip steak in egg batter and dust with cracker crumbs. Fry until golden brown in hot fat or grill as above.

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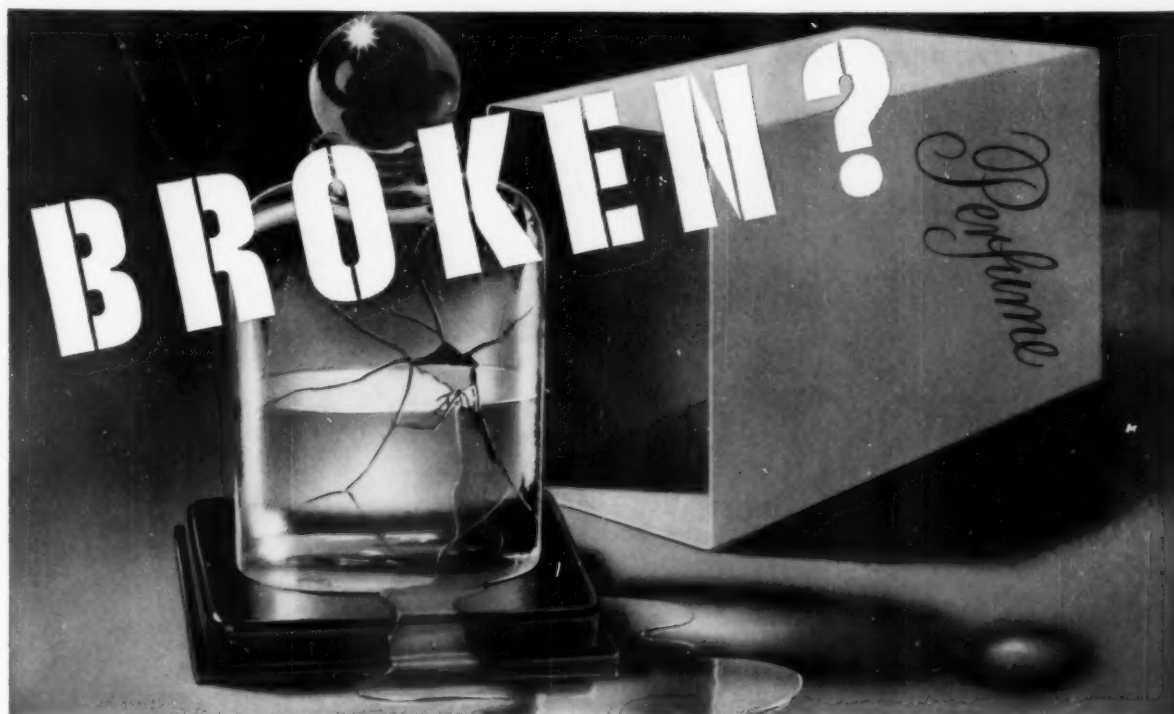
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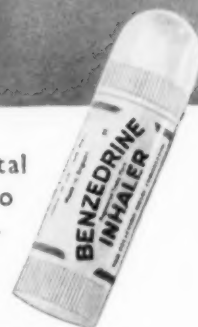
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when you need Polyethylene

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PETROTHENE* polyethylene resins have been in commercial production since late March. Yet at this early stage, production specifications that call for high and consistent quality are already being consistently met. Petrothene's properties of good color, uniform melt index, low fisheye count and high tensile strength have aroused considerable interest among those who have run test evaluations.

PETROTHENE polyethylene resins meet a wide range of specifications for extrusion and injection or compression molding of a great variety of articles.

When next you review your polyethylene requirements, talk with U.S.I.

*Trademark



INDUSTRIAL CHEMICALS CO.

Division of National Distillers Products Corporation

99 Park Avenue, New York 16, N. Y.

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CHECK THE BOX AT THE BOTTOM



... to see how Gaylord Boxes save you money in warehousing. They make possible taller stacking to better utilize your valuable storage space. The superior materials and precision construction of Gaylord Boxes help prevent "stack-bottom bulge."

For proof of how Gaylord Boxes can protect your profit, as well as your product, call your nearby Gaylord office.

CORRUGATED AND SOLID FIBRE BOXES • FOLDING CARTONS • KRAFT PAPER AND SPECIALTIES • KRAFT BAGS AND SACKS

GAYLORD CONTAINER CORPORATION ★ ST. LOUIS

SALES OFFICES FROM COAST TO COAST ★ CONSULT YOUR LOCAL PHONE BOOK



A winner on points too!

A tray and PLIOFILM overwrap can make a mighty attractive package for products that aren't usually thought of as glamorous—and the distributor point sets shown here are a good example.

But PLIOFILM adds a lot more than sales appeal. Its superb moisture-resistance helps prevent rust. Its superior strength prevents broken packages. And its adaptability to packaging machinery cuts your wrapping costs to a minimum.

Whether you're packaging automobile parts or poultry, meats or cheese, the Goodyear Packaging Engineer can show you how to benefit by these PLIOFILM advantages. Write him at

Goodyear, Packaging Films Dept. F-6418,
Akron 16, Ohio

Good things
are better in

Pliofilm


Pliofilm, a rubber hydrochloride—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

MERCHANDISING DYNAMITE

FOR **CANNED FOODS**



CLUSTER-PAK

revolutionize retail merchandising of your product through
multi-unit packaging

FOOD AND GROCERY MANUFACTURERS ATTENTION!

The CLUSTER-PAK machine uses the lowest cost carton on the market and packs any size can from 3½ oz. to 1 qt. It packs 2 to 12 cans single or double file and speeds up to 900 cans per minute. The multi-unit cartons are effective point of purchase displays that invite impulse pick-up and guarantee a tremendous increase in unit sales!

FOOD & GROCERY RETAILERS WELCOME CLUSTER-PAK!

CLUSTER-PAK lowers retail operating costs, increases retail operating efficiency, while it increases unit sales! The unbelievable labor saving includes cut in pricing time up to 83% and a drastic saving in pack-out, check-out and inventory time! Customer traffic speeds up and merchandise turns over faster! CLUSTER-PAK builds better floor displays in less space!

The time is right for multi-unit packaging of canned foods and grocery products! CLUSTER-PAK is the world's finest, most versatile, economical multi-unit packaging system for grocery items! Insist on CLUSTER-PAK, made by the world's largest maker of carry-home cartons!



CLUSTER-PAK DIVISION

apaco ATLANTA PAPER COMPANY ATLANTA, GEORGIA

(In Canada—PACKAGEMASTER, Ltd., Toronto)

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Formvac Corporation

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HYDRO-CHEMIE, Ltd., of Zurich, Switzerland

IS NOW A DIVISION OF
Welding Engineers, Inc.

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for the Plastics, Rubber, Chemical and Petroleum Industries

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America's Most Advanced
DEEP DRAW AND DRAPE
Vacuum Forming Equipment

COMBINING THE FINEST OF ORIGINAL SWISS PRECISION
DESIGNING WITH FOREMOST AMERICAN MANUFACTURING
AND PLASTICS ENGINEERING TECHNIQUES AND SERVICE

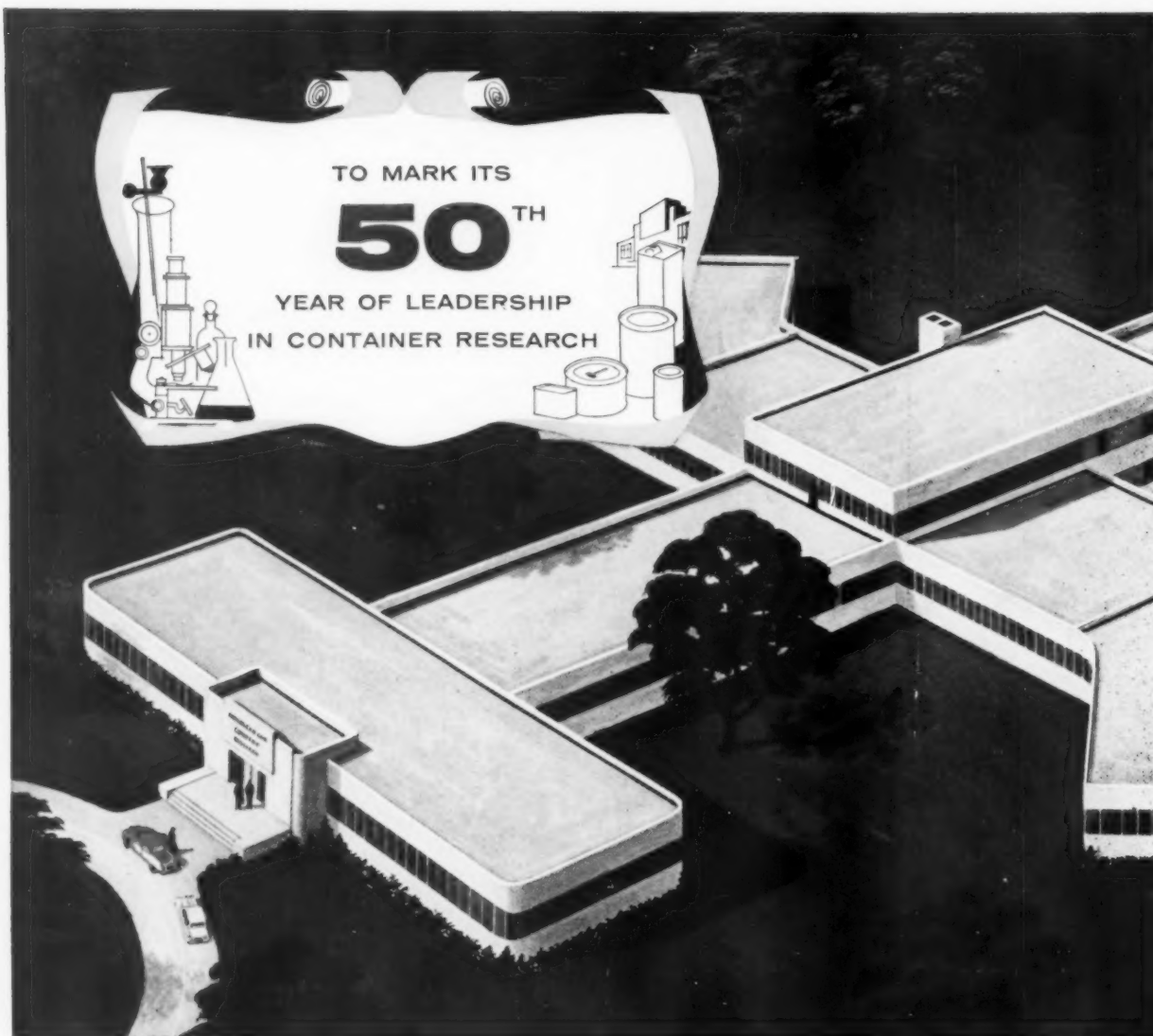
For Further Information, Demonstration Appointments, Sales or Engineering Service... write

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CORPORATION

A DIVISION OF WELDING ENGINEERS, INC.

601 W. 26th St. • New York 1, N.Y. • Telephone WAtkins 4-0014



American Can Company opens the most modern

Dedicated to creating cans that will add new convenience to your products

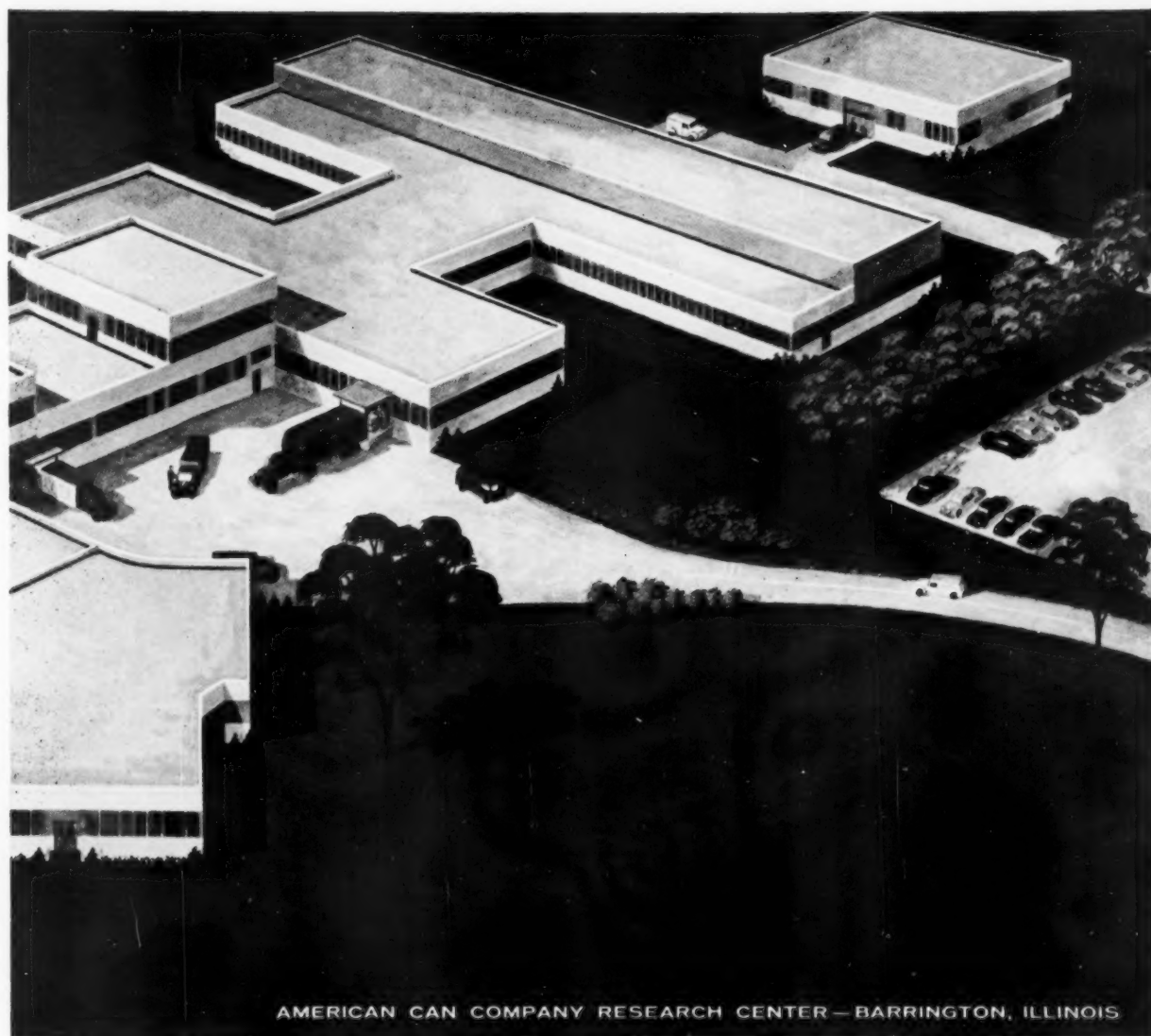
► This new research center is the latest link in the chain of progress which began with Canco's container research laboratory—the first in America—which was opened in 1906.

Through Canco research have come such important developments as the doubletite paint can, the motor oil can, the non-drip liquid detergent can, and new packages for drugs, medicinals, insecticides, blood plasma, and a host of other products.

The shape of cans to come

Who can even venture to guess what new miracles will be born at Barrington? For here, Canco's creative scientists will have the finest equipment and the most up-to-the-minute facilities of any container laboratory in the world.

Many dreams are already taking shape under our new roof. Studies are progressing in the use of atomic energy in the "cold sterilization" of foods.



AMERICAN CAN COMPANY RESEARCH CENTER—BARRINGTON, ILLINOIS

research center in the can-making industry

Accomplishing the "impossible"

Even more dramatic is the search for ways to make tin cans *without tin* . . . America's major source of tin lies directly in the path of current aggressors.

The problems are staggering—but the results will be even more so. We call this vitally important program *Operation Survival*—a name which may one day mean exactly what it says.

"Good" isn't good enough

Experience has taught that no container manufacturer can hope to make significant contributions to the nation's economy without constant research advancement. The good ways are not necessarily good

enough. The formula for growth is constant change, constant improvement, constant search for new and better containers.

It is to this kind of change that Canco's new Barrington Research Center is dedicated—to provide still better packaging for the products of America's agriculture and industry.

Go First to the People Who Are First!

AMERICAN CAN COMPANY



New York, Chicago, San Francisco



PNEUMATIC'S GOT
WHAT YOU NEED
if you want
COMPLETE
soluble coffee
packing equipment

The special needs of packers of soluble coffee are ideally met by this Pneumatic VACUFLOW Filler. Capable of speeds to keep easy pace with top volume productions, its dust-free action eliminates an "occupational" hazard that has been a troublesome problem in the past.

Vacuflow solves the first step in dust control by evacuating air from the container to be filled. This results in the ideal condition of particles falling undisturbed in an air free chamber. Vacuflow goes on from there to complete the filling operation, by employing the air film which surrounds each powder particle as a means of drawing the powder through an orifice into container.

AIR-CLEANING • CAPPING • LABELING, TOO!

An all Pneumatic line providing top efficiency, speed and economy, includes:

AIR CLEANERS — Semi-automatic and fully automatic models for air cleaning containers after inverting to facilitate removal of foreign matter.

PNEUMACAP — New air chuck automatically adjusts to the most finicky cap styles. Sterling cap feed eliminates tumbling and churning of caps. Single, four, six and eight head models are available for speeds ranging from 40 per minute.

LIGHTNING LABELERS (I & II) — For round containers — handle from minimum 2" diameter to maximum 4" diameter. A helical intake serves to feed and space the containers as they travel straight through. A rotating glue cylinder takes the labels from reciprocating magazines — a rotating gripper cylinder transfers the glued labels to the containers. Operation is entirely mechanical — no vacuum. Speeds, 150 per minute (Lightning I), up to 300 per minute (Lightning II).



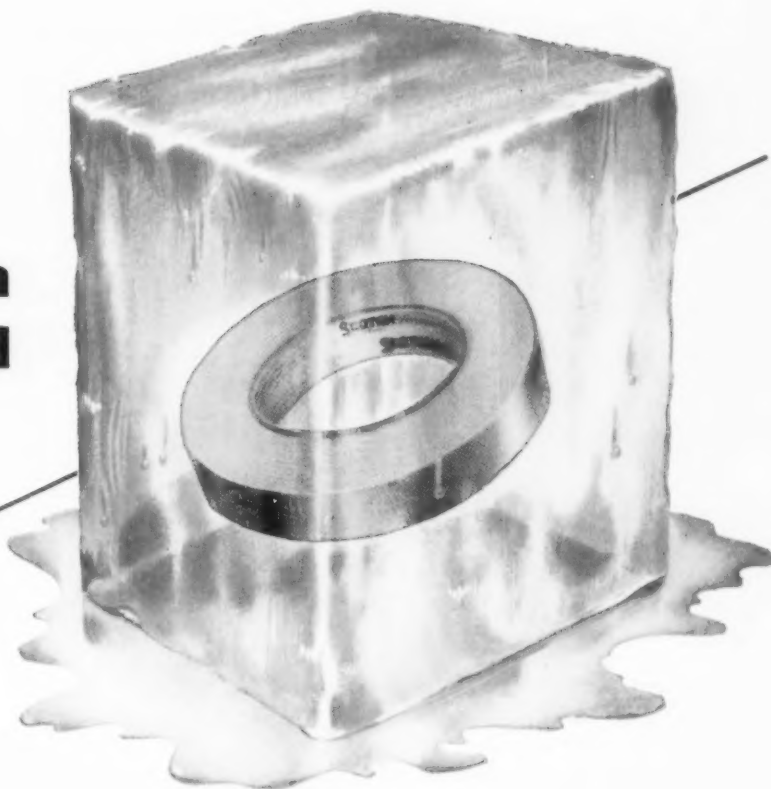
*All of these containers are handled by
Pneumatic equipment*

PNEUMATIC SCALE CORP., LTD., 82 Newport Avenue, Quincy 71, Massachusetts. Also: New York; Chicago; Dallas; San Francisco; Los Angeles; Seattle; Leeds, England. Canadian Division: Delamere & Williams Company, Ltd., Toronto.



Packaging and Bottling Equipment

TAPE that sticks in freezing cold



Tough, moisture-resistant "SCOTCH" Brand Acetate Fibre Tape sticks at a touch to metal, plastic, wood, glass . . . even at below-freezing temperatures. Long-aging and dimensionally stable, too. Available in 12 eye-catching colors for coding or identifying; can be printed on if desired. Ask your regular distributor for "SCOTCH" Brand Acetate Fibre Tape; for further information, write on your letterhead: Minnesota Mining and Mfg. Co., St. Paul 6, Minn., Dept. MP-65.

ACETATE FIBRE TAPE

...one of more than

300 Pressure-Sensitive Tapes

for industry, trademarked . . .

REG. U.S. PAT. OFF.

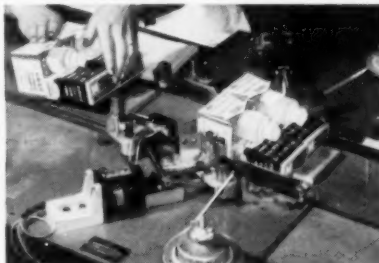
SCOTCH

BRAND

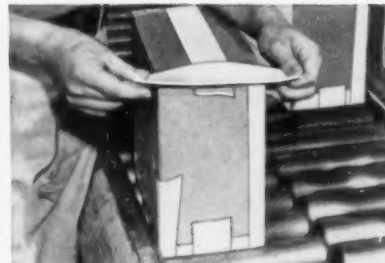
Look what you can do with it!



HARD-TO-PACKAGE products can often be bundled with "Scotch" Brand Acetate Fibre Tape No. 700. Tape sticks at a touch; 12 colors let you decorate as well as hold.



AUTOMATIC BANDING of deals or package-and-premium is handled at rate of 75 units a minute by S-69 Bundler and "Scotch" Brand Acetate Fibre Tape.



GOVERNMENT SPECIFICATION Jan-P-127, sealing and packaging, Types III and IV, grades A, B, and C, is surpassed by moisture-resistant "SCOTCH" Acetate Fibre Tape.

© 3M CO., 1955

The term "SCOTCH" is a registered trademark of Minnesota Mining and Mfg. Co., St. Paul 6, Minn.
Export Sales Office: 99 Park Ave., New York 16, N.Y. In Canada: P.O. Box 757, London, Ontario.



JUNE 1955

25

***If you missed us at the packaging show
you should investigate our***

MODEL 635-704 SLITTER-UNWINDER COMBINATION

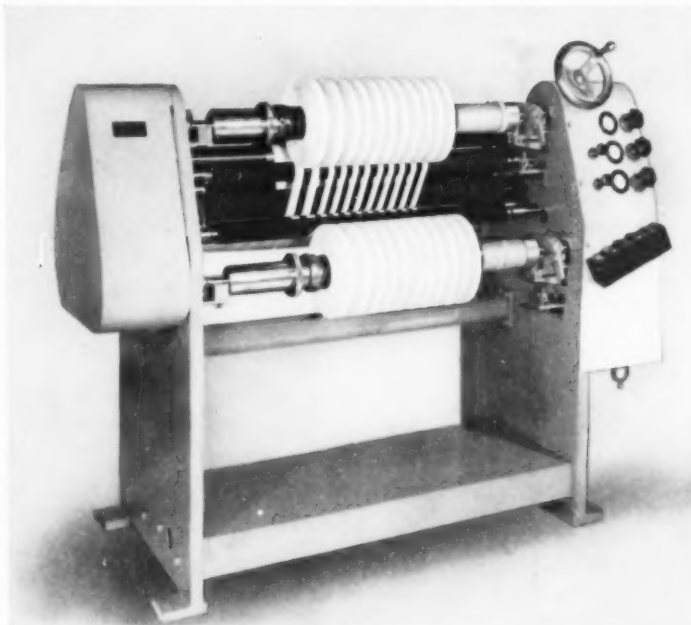
A HIT AT THE SHOW

for

**FILM • TAPE
FOIL • PAPER**

The combination of our Model 635 Shear Cut Slitter and Model 704 Air Operated Unwind Stand met with enthusiasm by all who saw our demonstration. The Model 635 with 18" rewind capacity equipped with a dual drive is now capable of speed in excess of 1000 F.P.M.

The Model 704 is the ultimate in Constant Tension unwinding and precise automatic web guiding. It has been designed for web guiding with maximum accuracy and close tension control on the web.



MODEL 635, 704

CHECK THESE MODEL 704 SPECIFICATIONS

MAXIMUM SPEED

Top speed not determined. Tested at 1000 F.P.M.

WEB GUIDE TYPES USED

- A) Askania Hydraulic Web Guide with signal being taken from the edge of web by air jet. Lateral movement of 704 through hydraulic cylinder.
- B) Photocell either General Electric or Westinghouse. Signal being taken from edge of web or printed line. Lateral movements of Model 704 made by variable speed D.C. motor.

CONSTANT TENSION UNWINDING

Model 704 is equipped with a Lod-Cap made by the Link Engineering Company. The unit continually measures the sheet tension in the web and automatically adjusts the air pressure in the brake to create constant tension in the web.

A gauge at the operator's position shows at all times the tension in the web in pounds. Sheet tension can be instantly adjusted by the operator while the slitter is running and the results visually shown on the gauge.

A Foxboro recorder can be supplied as optional equipment if a permanent written record of the sheet tension is desired.

STANDARD 704

Up to 62" width. Specify width required.

36" diameter

Maximum brake torque—4500 inch lbs. at 100 PSI.

Heat dissipation 1 HP

1½" Unwind Shaft Journal diameter

Specify diameter at center for core chucks

For unwinding applications not covered by the standard 704, please send us mill roll dimensions, speed of web, tension required and core size desired.

JOHN DUSENBERY COMPANY, INC.

275 GROVE AVENUE, VERONA, N. J.

Tel: Verona 8-3915

SEE HOW it pays to package in film made of **BAKELITE** Polyethylene



Bags made by **Shore Line Industries, Inc.**, Clinton, Conn.

"it made our product possible"

So testifies Warren Richards, Jr., President of Clinton Nurseries, Clinton, Conn., pioneers in soil packaging.

"This is a case where, actually, there wasn't a salable product until the package came along. It took polyethylene to provide a practical way to put soil and humus, with high organic and chemical content, into consumer-sized packages that were sales-appealing, economical, and would stay in good condition."

This is not unusual. **BAKELITE** Brand Polyethylene has launched many a successful product. Today, a constantly growing number of products in almost every field show consistently greater sales when packaged in film made of **BAKELITE** Brand Polyethylene. Remember, Bakelite Company is the largest producer of polyethylene, leadership that assures highest quality. Call your packaging supplier.



BAKELITE COMPANY, A Division of Union Carbide and Carbon Corporation **UCC** 30 East 42nd Street, New York 17, N. Y.
The term **BAKELITE** and the Trefoil Symbol are registered trade-marks of **UCC**



Soft bottles sell shampoo and safety

The Revlon Aquamarine Shampoo bottle has semi-transparent sides that let the color of the contents show through. The ribbed surface is so finely molded that it reflects eye-catching glints of light.

Any bottle can *hold* shampoo. But every bottle won't *sell* shampoo. This one sells shampoo with a big plus for safety. Its finely-ribbed surface and flexible sides look good, feel good. They give a sure, safe grip to busy, sudsy hands. Even if it does fall, this bottle won't break and shatter on the bathroom floor.

Bottles, jars, and closures molded from BAKELITE Brand Polyethylene can

have unlimited colors, infinite shapes, varied surface textures. They're inert to chemicals. Tubes molded from BAKELITE Polyethylene don't stay crushed. They keep your brand name visible and always look neat. Get all these sales advantages for your product. Package it in a container molded from BAKELITE Polyethylene. For names of suppliers, write Dept. GZ-105.



BAKELITE COMPANY, A Division of Union Carbide and Carbon Corporation **UCC** 30 East 42nd Street, New York 17, N. Y.
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FIRST IN Heat-resistant inks

FOR CELLOPHANE AND OTHER HEAT-SEALABLE STOCKS



NEW IPI FLEXOGRAPHIC INKS FOR CELLOPHANE
PRINTING RESIST SMEARING AND RETAIN
BRILLIANCE UNDER SEALING HEAT

At last . . . here's the ink that cellophane bag printers have long awaited. This new line of heat-resistant inks—now part of our famous high-gloss Gemglo series—really *resists* the heat generated on wrapping and bag machines.

These inks resist smearing, offsetting and blocking at the point of contact where the heat seal jaws clamp down on the thermoplastic-coated cellophane.

Even a solid area of ink withstands the heat from the sealing jaws. It stays more scratch-resistant . . . more light-fast . . . more scuff-proof. It retains its

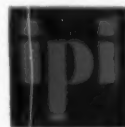
brilliance longer . . . and performs better on the press. The heat merely releases the solvent and makes the ink adhere without damaging the ink film.

If you are plagued by customers' complaints over the quality of printing on cellophane or any heat-sealable stock due to ink troubles, talk to your IPI salesman. He has the answer for ink smear caused by heat-sealing machines—it's new IPI heat-resistant inks. They pay off in better running qualities—on the press and on the packaging machine with a better appearance all along the line!

IPI, IC and Gemglo are trademarks of Interchemical Corporation

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PRINTING INK DIVISION • 67 W. 44th ST., NEW YORK 36, N. Y.



INTERCHEMICAL
PRINTING INKS



RELY ON IPI FOR LEADERSHIP IN INK RESEARCH

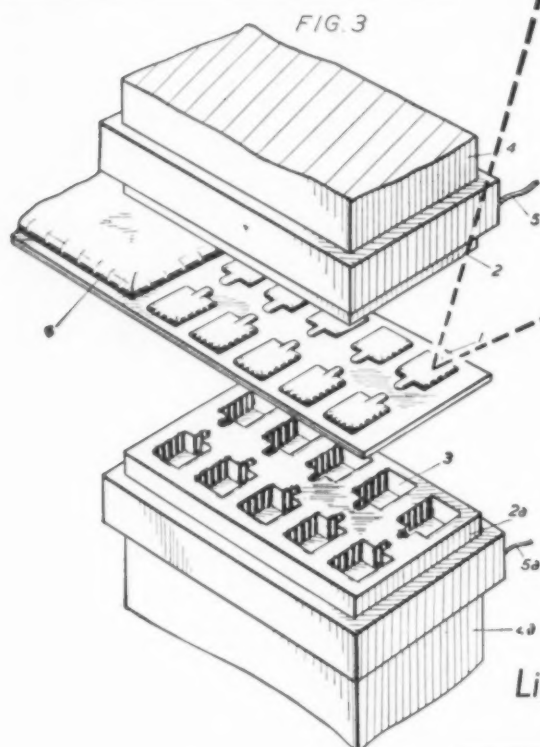
THE **RADO** PACK

BRITISH PATENT

No. 673,813

15th OCTOBER, 1947

PATENTS IN OTHER COUNTRIES
AND FURTHER PATENTS PENDING



Efficient
Very economical
Safest in distribution
Simplest, most convenient
Attractive, Displays the product
Lightest, easiest to pack, Unbreakable

ALL the advantages of Unit Packaging are embodied in Packs produced by the RADO SYSTEM—based on the RADO patents—the only fast, efficient way of producing such packages. Further interesting developments pending ; ask for details NOW !

We will pack YOUR product in packages of YOUR own design, decoratively emboss them to YOUR wishes, print them attractively to YOUR requirements. Almost ANY kind of liquid, semi-liquid or pastelike product can be successfully packaged by the RADO SYSTEM.

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RADO
PACKAGING SYSTEM

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LUSTRAGLASS is clearer, whiter, and possesses a jewel-like lustre — it is a product of well deserved prestige. Your product has special advantages, too. And an eye-catching label will remind customers of your products and its benefits right at the point of purchase. Use our design and production know-how to label your products for greater sales.

For the right labels to do the job right, write to

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MODERN PACKAGING



More than 100 miles of gift wrap per day is the output of this Kidder FLEXOPRINTER® — 20-lb. stock printed in 4 colors. Press was installed by Kidder for The Papercraft Corporation, Pittsburgh.

Searched the world . . . settled on Kidder

"It took years of analysis, thousands of miles of traveling, and only a few weeks of experience with our new Kidder Flexoprinter® printing press to convince us that all of our future printing equipment will be Kidder."

These are the words of J. E. Katz, Vice President in charge of Manufacturing of The Papercraft Corporation in Pittsburgh, high-ranking producers of quality gift wrapping

materials. Officials of the company personally investigated the presses of every manufacturer of printing equipment in U. S. and Europe.

Says Papercraft: "The job Kidder does for us is to give us *quality reproduction* . . . Right now we print all of the difficult jobs on the Kidder."

More than 60% of the presses Kidder builds are for "repeat customers." That's how Kidder satisfies new customers so well, too.



Kidder

Letterpress, Flexoprinter®
and Gravure Presses,
Slitters and Rewinders

KIDDER PRESS CO., INC., DOVER, NEW HAMPSHIRE

it will pay you to package your spices in **R.C. ^{metal top} FIBRE CANS**

Here are the facts . . .

- **SMALLER INVENTORY**—R. C. Fibre Cans can be ordered in any quantity—however small. It isn't necessary, because of expensive lithography, to restrict your orders to 25,000 or 100,000 lots. No need to overstock on a slow-moving spice item that will take years to use up.
- **MINIMUM DANGER OF OBSOLESCENCE**—With R. C. Fibre Cans you order when and as you need them. This means an up-to-date can—labels that can be easily and inexpensively revised.
- **FASTER SERVICE**—Quick, dependable delivery keynotes every R. C. order. R. C.'s broad facilities and thorough-going experience in the manufacture of fibre containers is enhanced by freedom from the usual material shortages and cutbacks—plus four strategically located plants.
- **DURABLE, SMART-LOOKING DESIGN**—Product protection comes first in R. C. Packaging. Rugged "shelf-proofed" design is combined with attractive, up-to-date design.
- **LOWER COST**—Less to produce—less to ship—always on hand without jamming up your valuable warehousing space.
- **COMPLETE VARIETY OF SHAPES AND SIZES**—Round, square, oval, or oblong—with any type of closure to fit your individual needs. Find out today how R. C. Fibre Cans will save you money, time, space and production headaches.



**SLIDING
DREDGE**

**REVOLVING
DREDGE**



**FRICTION
TOP**

"CAN-gineers to the Packaging Industry"

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Trojan

FOIL

FOR EVERY PURPOSE

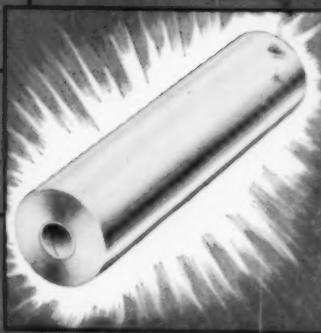
TROJAN

Laminates include:

FOIL PAPERS
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LAMINATED FABRICS
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LACQUERED NET FOIL
GUMMED NET FOIL

Send for a Sample Book

A FREE copy of the Trojan Sample Book of Laminated Foils will be gladly sent upon request. WRITE TODAY.



TROJAN Foil Stocks include weights, finishes and colors that *exactly* meet the requirements of Seal and Label Printers, Greeting Card Manufacturers, Folding and Fancy Box Makers, Gift Wrap Converters and Novelty Manufacturers. TROJAN Foils are characterized by their fine printing, lithographing, embossing and die-cutting qualities. If you use foil laminated paper or board, in rolls or sheets, gummed or ungummed, you will find a TROJAN grade that is best for your purpose.

**The
GUMMED PRODUCTS
Company**

Main Offices and Mills: **TROY, OHIO**—Sales Offices: Atlanta, Chicago, Cincinnati, Cleveland, Los Angeles, New York, Philadelphia, St. Louis, San Francisco—Distribution from coast to coast.

NOBODY HAS AS MUCH EXPERIENCE
AT MOLDING POLYETHYLENE AS

TUPPER!

The logical molder for you to consult regarding that product or package of yours which is to be made of polyethylene is Tupper. Tupper has done more than any other molder to make molded polyethylene a practical reality.

Aside from having designed, patented, and promoted successful seals, closures, and dispensers for polyethylene containers, the Tupper Corporation has vast experience in *every phase* of polyethylene packaging and polyethylene injection molding. This experience will be of major importance in improving your product, in reducing your costs, when Tupper goes to work for you.

Tupper's combination of experience, technical ingenuity, and the most modern equipment is at your service for the custom molding of your product in polyethylene. You can do no better than the best ...and the best at molding polyethylene is Tupper!

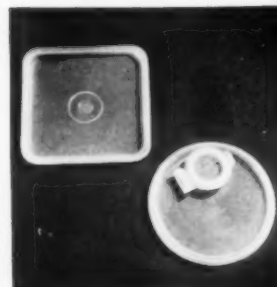
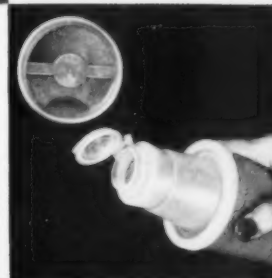
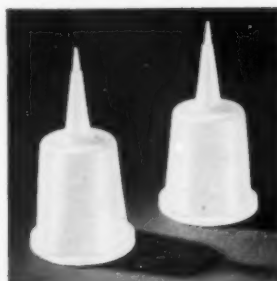
TUPPER!
TRADE MARK

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Manufacturers of — CONSUMER, INDUSTRIAL,
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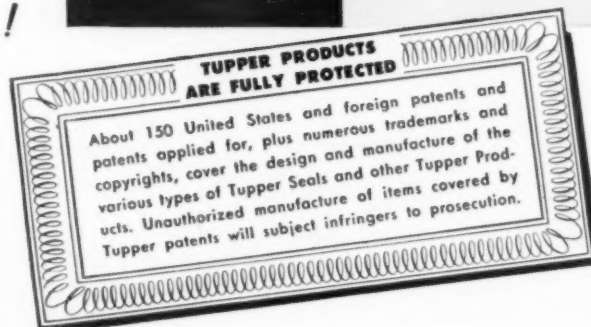
Address all communications to: Dept. MP-6

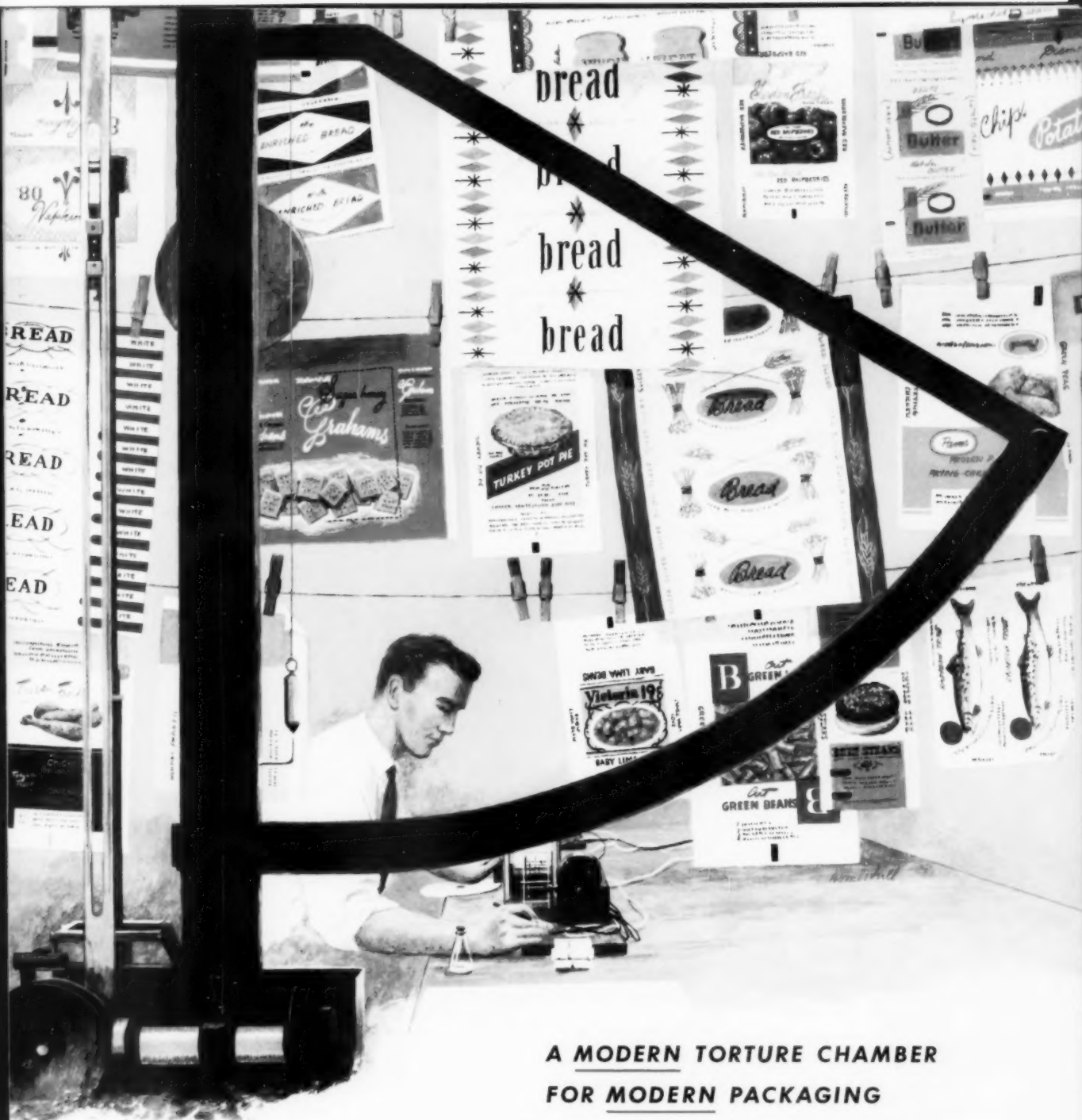


Tupper Seals are air and liquid-tight flexible covers. The famous Pour All and Por Top covers are designed for easy dispensing. They are made in sizes to fit all Tupperware containers.



When equipped with Tupper Seals, Tupper Canisters, Sauce Dishes, Wonder Bowls, Cereal Bowls and Funnels in various sizes are the most versatile reusable containers you have ever seen.





A MODERN TORTURE CHAMBER FOR MODERN PACKAGING

Your package is subjected to the most vigorous and exacting punishment in Crown Zellerbach's Research Laboratories, the most modern and complete in the packaging industry.

All Western Waxed wrappers are completely tested under the most varied and extreme climatic conditions, from arctic cold to tropic heat. These same rigid standards of quality control apply throughout every step of our completely integrated operation from tree seed to package.

Yes, we torture your package to guarantee that your product will have maximum protection and appeal, from initial wrapping to final consumption.

another reason why Western Waxed
packaging materials are the best

WESTERN WAXED PAPER
DIVISION CROWN ZELLERBACH CORPORATION





Your Huntington, Indiana Source for Adhesives and Coatings is now ready

In effect, Angier's modern facilities at its new midwestern plant are *yours* also. Because "custom" manufacturing of adhesives, coatings and sealants will go on there just as it has for over 20 years at the home plant in Cambridge, Mass.

For a variety of reasons involving time and money, you may prefer the Huntington, Indiana location to the Cambridge location. Just remember that Angier is now able to make overnight delivery to all Eastern and Midwestern major cities.

Will an adhesive or coating improve the end-use of your product or cut its production costs? Angier will find the answers for you in surprisingly short time.

Call or write Dept. B at the nearest Angier Plant for personal attention. We will help you define your problem as well as solve it. Inquiring will not obligate you in any way.

FOR EVERY INDUSTRY

Latest Developments
in Pressure Sensitive
Cements



Rubber, Latex and
Resin Cements
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Tie Coats
Resin Emulsions

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Angier Products

Main Plant: 120 POTTER STREET, CAMBRIDGE 42, MASS.

Midwestern Plant: Huntington, Indiana

MODERN PACKAGING



because you can't forget squeeze bottles like this
...remember PRECISION EXTRUDERS!

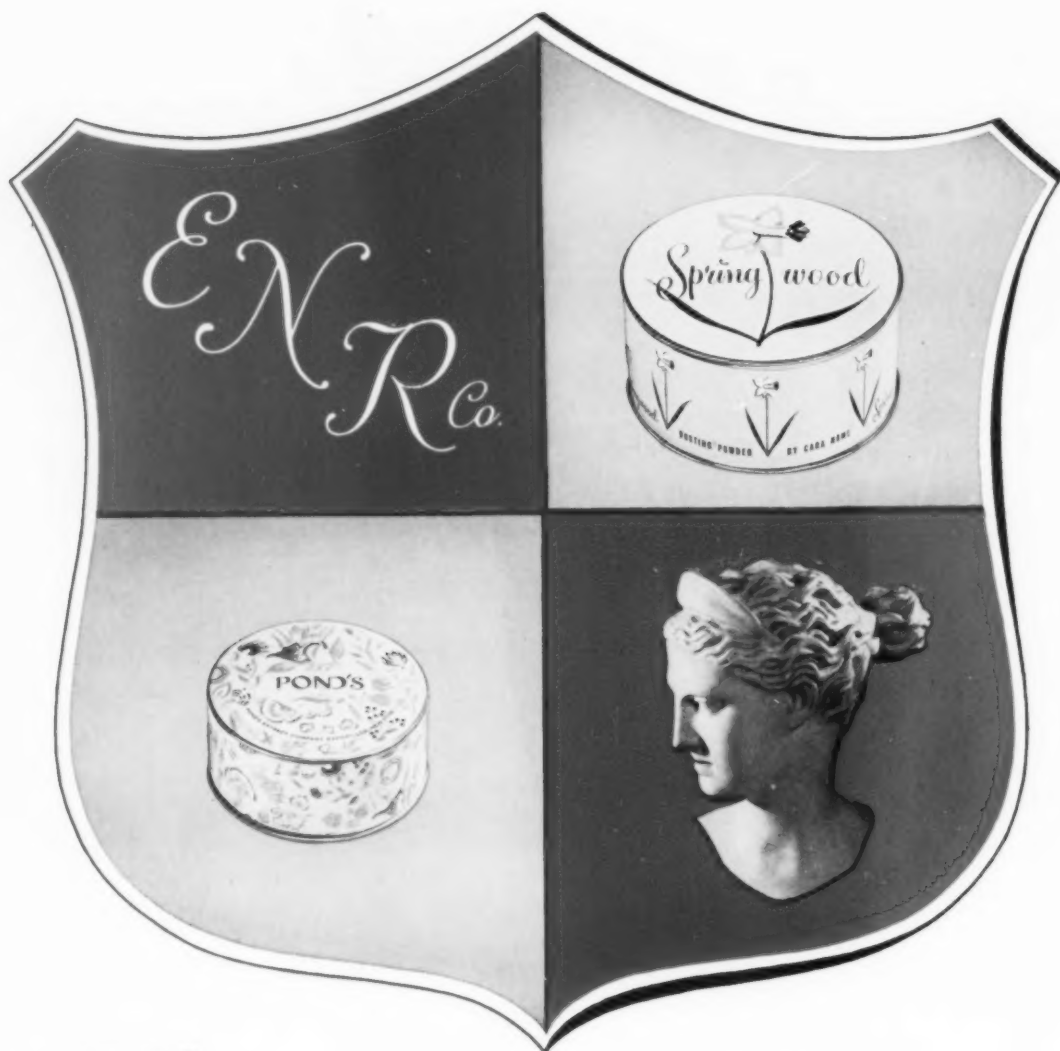
You can see two of the reasons why BRISTOL-MYERS chose PRECISION EXTRUDERS spray package for MUM MIST...imaginative color and design. But note these other memorable advantages. Economy in price. Consistency in quality. And top level cooperation all the way.

APPEAL

PRECISION EXTRUDERS

DIVISION LAMEX CHEMICAL CORPORATION

SALES HEADQUARTERS: 112 WEST 34TH ST., NEW YORK 1, N. Y., TEL.: WISCONSIN 7-8343 • FACTORY: LEOMINSTER, MASS.



For Quality that's Traditional

.... ROWELL BOXES

Round and square set-up boxes

... the finest materials and construction

Manufacturers of Fine Paper Boxes

E.N. Rowell Co. Inc.

BATAVIA, NEW YORK

STEIGERWALD

SENSI-STICK

LABELS

Pressure Sensitive

NO
WATER!

NO
GLUE!

Easy as 1, 2 to Apply!

NO
CLEANUP!

STICK
TIGHT!

PERMANENT
OR
REMOVABLE

Easy to Apply . . . Sure to Stick!

Gone is the glue pot! Gone is water! Steigerwald Sensi-Stick pressure sensitive labels eliminate forever old-fashioned start-up and clean-up labeling machine jobs.

Sensi-Stick simplifies labeling to a 1, 2—pick and stick quick way—Individual labels or Dispenser automatically feeds individual labels on a tape ready for rapid application.

Economical — Faster Better for all surfaces

Steigerwald Sensi-Stick labels hold securely on all surfaces—won't buckle, curl or rub off even where others fail and nothing else will hold—choice of permanent or easy-to-take-off, surface safe adhesives.

Beautiful designs

Reproduce your present label just as it is on Sensi-Stick or consider a new design with a choice of gold or silver foil; embossed; lustrous papers and sparkling inks to add an extra note of quality to your product. Use Sensi-Stick to show you the way to the world's fastest hand labeling operation.



Phone . . . Wire . . . or Write Today!

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Stollmaier & Son, Inc.
Mariemont Center Bldg.
BRamble 0222

CLEVELAND, OHIO

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Cherry 1-2468

EAST AURORA, N. Y.

E. A. Brewer
33 Park Place
Phone 1004

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Ray A. Cunningham
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H. C. Lackowski
1584 So. 82nd Street
Bluemound 8-0065

Call, wire or write today for a STEIGERWALD representative to see you at your convenience. Also ask our representative about our complete label design service offered without obligation.

a. m. steigerwald co.

910 West Van Buren Street
CHICAGO 7, ILLINOIS
Taylor 9-5400

control's the thing...

WITH ANCHOR HOCKING, TOO

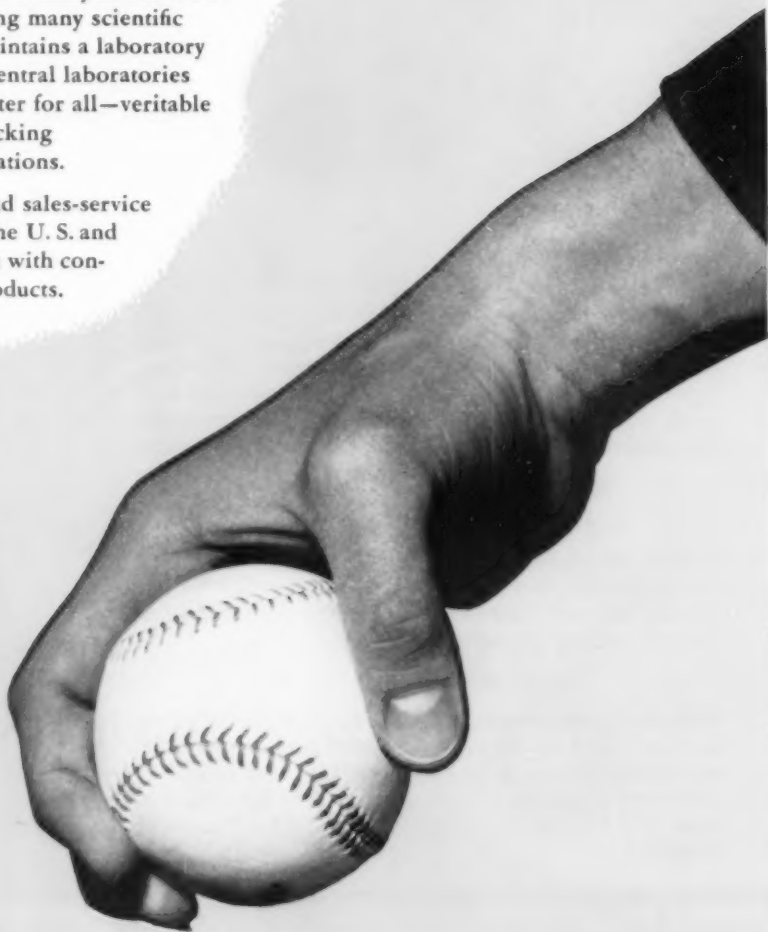
The clutch pitcher must have sharp *control* to deliver the ball to the right spot at the right time. And *control* is important, too, in the manufacture of Anchor Hocking quality products.

From the selection of all raw materials to the final production line inspection, Anchor Hocking employs literally hundreds of exacting *controls*, tests and checks involving many scientific testing devices. Although each factory maintains a laboratory of its own for quality control purposes, central laboratories at Lancaster, Ohio, serve as a control center for all—veritable watchdogs that make certain Anchor Hocking products comply with their rigid specifications.

Eleven strategically located factories and sales-service representatives in 25 principal cities in the U. S. and Canada await the opportunity to serve you with controlled high quality Anchor Hocking products.

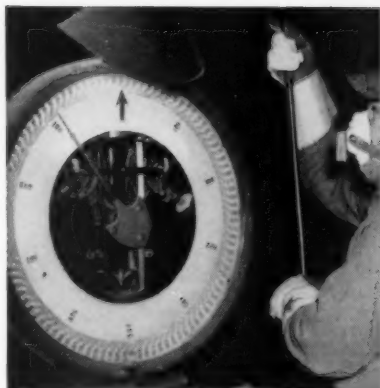


Anchorglass® Containers are uniformly strong, tough, dependable—high in chemical durability, accurate in dimensions, capacity and finish . . . a result of exacting quality controls.





50th Anniversary



The exact quantity of each material needed for the glass batch is weighed with unerring accuracy on scales that are checked daily.



Gaging of finishes is but one of many detailed checks that are made regularly to maintain accuracy in Anchorglass Containers.



The color of ware is maintained at uniform standards by precise measurements with the Spectrophotometer in Anchor Hocking factory laboratories.

ANCHOR HOCKING

GLASS CORPORATION

GENERAL OFFICES — LANCASTER, OHIO



ANCHORGLASS CONTAINERS, ANCHOR METAL AND PLASTIC CLOSURES, ANCHOR SEALING MACHINES, CARTONS AND PACKAGE ENGINEERING SERVICE... FOR PACKERS, MANUFACTURERS, BOTTLERS OF FOODS, DRUGS, HOUSEHOLD CHEMICALS, COSMETICS, TOILETRIES, BEVERAGES, BEERS, ALES, WINES AND LIQUORS.

SAFE ON ARRIVAL!

... because it's strongest by far.

From Container Laboratories Inc. —

In strength tests of standard mailing boxes for American Blue Print Company, they identified Box B in results below as your Mason MailMaster:



BOX	CALIPER	DRUM TEST FALLS BEFORE FAILURE
A	.047	Average 20
B	.046	Average 36
C	.044	Average 7
D	.051	Average 10

80% Stronger than A
414% Stronger than C
260% Stronger than D



MailMaster

1,000,000 BOXES IN STOCK

Write Dept. M2 for colorful catalog and price list showing over 65 stock sizes.

THE *Mason*

BOX COMPANY

ATTLEBORO FALLS, MASSACHUSETTS
NEW YORK — 175 FIFTH AVENUE



A COMPLETE LINE OF STOCK MAILING AND DISPLAY BOXES

*Checks
out
because it
...Stands
out*



A Dixie Designed Package Always Moves Fast

Packages designed by Dixie's experienced art department have eye and buy appeal that makes them stand out in any store. This stand out appeal and beauty means more sales. Give your product more beauty, quicker brand identification in a DIXIE package custom

designed to fit your needs. From original design to fine flexographic and rotogravure printing on Polyethylene, Foil, Acetate or Cellophane. Dixie can give you a protective package that will result in faster turnover and increased sales.



Just call or write your nearest DIXIE plant for full information

DIXIE

Wax Paper Company

DALLAS, TEX. • MEMPHIS, TENN. • WASHINGTON, N. J. • BURLINGAME, CALIF. • MEXICO, D. F.



Plastic **COSMETIC CONTAINERS**

AIR-INSULATED

The inner bowl and outer shell of Colt-molded polystyrene containers are separated by an insulating air space. This exclusive Colt construction retards separation of the ingredients in the contents; minimizes losses due to deterioration and poor appearance of the product packaged.

FEATHERWEIGHT

The light weight of these containers cuts shipping costs for the packager. It also gains additional acceptance with traveling people who appreciate less weight in their luggage.



WRITE TODAY FOR YOUR COPY OF
THIS CATALOG-AND-PRICE BULLETIN

PLASTICS DIVISION • COLT'S MANUFACTURING COMPANY • HARTFORD 15, CONN.

What can packaging's first "delayed tack"
foil heat seal label do for you?



foil for beauty

heat seal for permanency

"delayed tack" for speed

Now Rotogravure Packaging, Inc. brings you the first foil heat seal label with delayed tack. This innovation means labels are heated before reaching the container . . . are applied at high speed . . . then set under unheated pressure at a later stage. Your package gets top sales at top speeds because labels go on fast . . . stay fast.

Rotogravure Packaging, Inc. is equipped to give you quality performance in printing and converting all types of foil, plastic film, paper, and other packaging materials.

Write today for complete details and samples.

Rotogravure

PACKAGING INC.

820-26 N. CICERO AVE. CHICAGO 51, ILL. COLUMBUS 1-3615

There's a **PLAX** Package with the ideal **COLOR** for merchandising your product



Rainbow choice is yours . . . opaque for concealment . . .
translucent for enhancement . . . natural for giving colored
fluids or powders a silky sheen. Color as you want and
need it for identification, appeal, atmosphere.

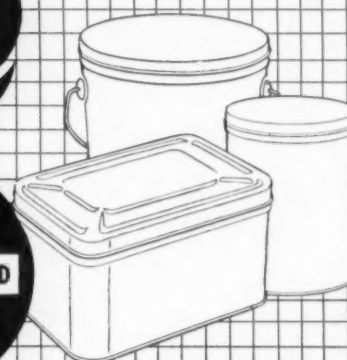
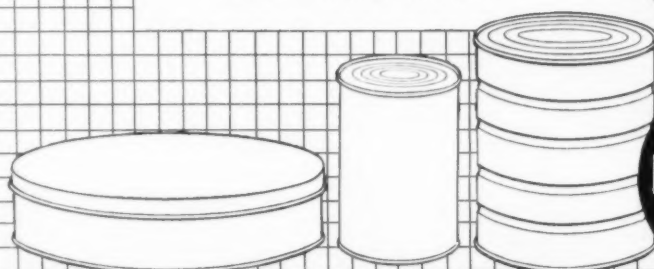
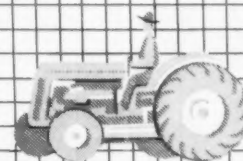
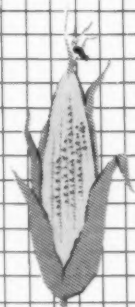
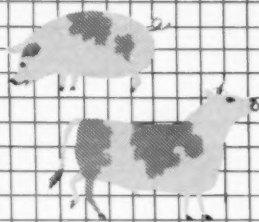
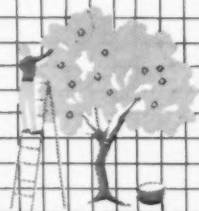
PLUS these extras: lightweight, unbreakable package that
can save you hundreds of thousands of dollars in shipping costs;
the precise dispensing action that's best for your product,
whether it's a spray, drop-by-drop, controlled pouring or direct
application. See Plax for the best in convenience packaging.

PLAX CORPORATION

P. O. Box 1019, HARTFORD, CONNECTICUT

IN CANADA: Plax Canada, Ltd., Montreal and Toronto

In plastic bottle packaging, only Plax offers continuous
research, complete design service, and long experience.



HEEKIN

PRODUCT PLANNED

CANS

THE HEEKIN CAN CO. PLANTS AT CINCINNATI & NORWOOD, OHIO;
CHESTNUT HILL, TENNESSEE; SPRINGDALE, ARKANSAS

YOU'RE going to hear a lot about Heekin Product Planned Cans in your industry. Do you know about the constant research that forms the basis for product planning? Heekin has perfected formulas to meet about every problem in the economical metal packaging of your product. Heekin's fifty-four year experience in can manufacturing guarantees you cans when you want them. Call in Heekin the next time you order cans. *Plain or lithographed Heekin Cans are Product Planned for your product and your profit.*

Out of the
Woods*
with the
Goods



* From the abundant Piney Woods of East Texas, East Texas Pulp & Paper Company's new mill delivers quality pulp, board and paper grades on time. Ready now to serve you.



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Telephone Evergreen 5-3711

Western Sales Office
1003 Builders Bldg.
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MODERN PACKAGING

**Flexographic
Printers**

Cut your ink inventory

(get better print quality too)

with BBD's multi-purpose universal

Performance-proved since 1950

**Use
"400 Series"
Ink to print...**

**Plain
CELLOPHANE**

**Anchor-coated
CELLOPHANE**

**Moisture proof
CELLOPHANE**

**POLYETHYLENE
(treated)**

**ALUMINUM
FOIL**

GLASSINE

**SPECIALTY
PAPERS**

No special solvents required

Count the number of partly-filled cans of ink you have on hand. Figure how much you have invested in these seldom-used "left-over" inks. Then see how BBD's versatile multi-purpose "400 Series" Ink can save you money.

When you use "400 Series" Ink you don't need special inks for every different kind of material you print—"400 Series" is the right ink for every standard type of cellophane, polyethylene, foil, glassine and paper. And you don't need special "hard-on-rubber" solvents either—"400 Series" Ink is designed to work on any stock with regular alcohol as a solvent, assuring complete safety to plates and rollers. With "400 Series" Ink on hand you carry a smaller inventory... you save time waiting for shipments of special inks... you increase press production by switching from one stock to another without changing ink or

cleaning fountains.

And that's not all—because "400 Series" Ink is a quality ink it assures better printing results too. Fully pigmented and color-stabilized, "400 Series" Ink has excellent opacity, light-fastness and bleed-resistance... is unaffected by paraffin wax or fish, vegetable and mineral oils. It gives sharp, clean, smooth-laying and glossy impressions at press speeds up to 475 fpm... retains its anchored adhesion and flexibility at temperatures as low as 0°F. Furthermore, because it's self-soluble, "400 Series" Ink cleans itself from plates and rollers with every revolution... reduces downtime for wash-ups.

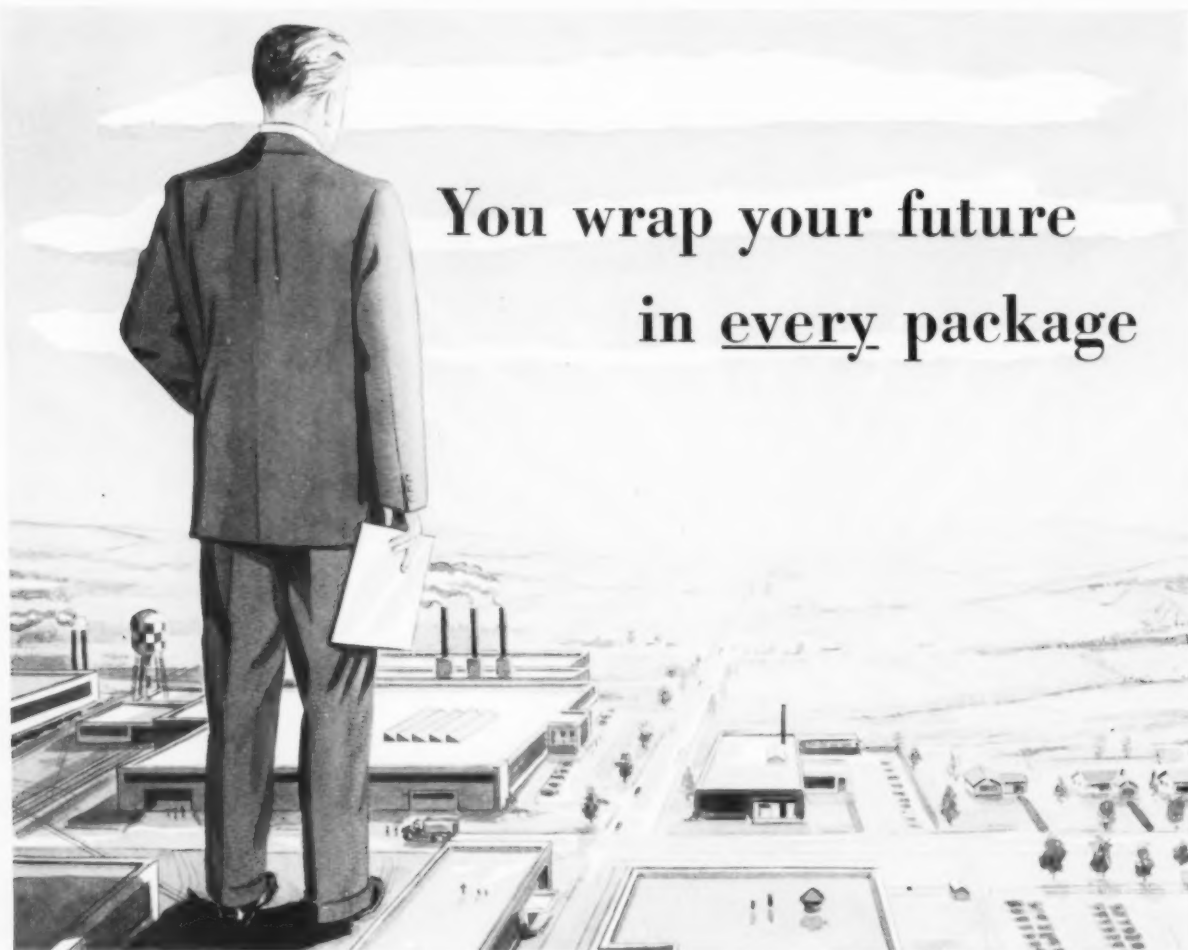
Leading flexographic printers have used BBD's "400 Series" Ink since 1950 to cut their ink inventories and meet their quality standards. We invite you to try it too.

NEW "400 Series" Ink
Technical Data Sheet now
available. For a free copy
write today to **BENSING
BROS. & DEENEY, 3301
Hunting Park Avenue,
Philadelphia 29, Pa.**

Bensing Bros. and Deeney
Flexographic Ink Specialists
PHILADELPHIA • CHICAGO • SAN LEANDRO, CAL.
CAMBRIDGE, MASS. • MONROE, LA.

MANTON BROS. TORONTO, Canada
TRENAL CO. BRUSSELS, Belgium
COLORA, LTD. BERNE, Switzerland
Export: McLAURIN-JONES CO., New York





You wrap your future
in every package

Make it brighter with KVP wrappers

Two food selling fundamentals everyone knows—yet sometimes forgets—are: *Goodness must be protected from plant to household table. For greatest package sales appeal show foods so realistically they look "good enough to eat."*

For *protection*, KVP makes Kalapak (for frozen foods), Super Kalakote, and the amazing new Kalafoil—all with unrivalled sealing qualities and surface brilliance—plus many specialized and laminated papers.

For *sales appeal*, KVP's large experienced art staff is at your service—and new 6-color letterpress and 8-color gravure equipment reproduces food illustrations with striking appetite-provoking realism. KVP wrappers usually protect food better—often lower packaging costs—often increase sales. Write for samples and full details.

KALAMAZOO VEGETABLE PARCHMENT CO., Kalamazoo, Michigan

Specialists in FOOD PAPERS



For Protection and Sales Appeal

VLCHEK PLASTIC BOXES

**SHOW 'EM
AND
SELL 'EM**



FISHING TACKLE

1. Containing five colorful Spinning Lures plus a Nylon Leader, this handy pocket-size, plastic box is both package and point-of-sale display.

2. "These crystal-clear boxes give our products added sales appeal," says a manufacturer of fine fishing tackle.



FITTINGS AND PARTS

3. "Year by year...this Vlchek Plastic Box has become increasingly popular with our customers," writes a large manufacturer of grease fittings.

4. This clear, plastic, eleven-compartment Vlchek Plastic Box is used by a leading manufacturer of all types of resistors for radio and television. The box holds parts for repairmen to use in replacing concentric dual controls of television sets.



PHARMACEUTICALS AND DRUGS

5. A leading manufacturer of pharmaceuticals since 1828 uses Vlchek Plastic Boxes for sending samples to physicians.

6. Antibiotics and other medicinal products packaged in transparent Vlchek Plastic Boxes, win attention. The salesmen gain valuable interest and increased acceptance from members of the medical profession by using these as demonstration boxes.



**Proper Packaging Promotes
Profits! Let's Talk It Over!**



THE

VLCHEK TOOL CO.

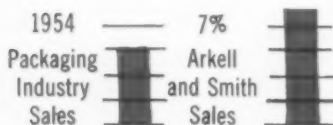
2001 East 87th Street
Cleveland 4, Ohio





Why A & S '54 sales gained 7% ahead of the packaging industry:

With emphasis on packages that **SELL**, A&S's own '54 sales leaped 7% ahead of those of the Packaging Industry as a whole. Package Designing Service by A&S is admittedly outstanding, as is A&S's photo-engraving, plate making, and printing. Because A&S customers have enjoyed greater sales, A&S has moved ahead of the industry.



The complete sales-minded line of ARKELL & SMITHS' packages includes—in the potato field alone—3 *different kinds* of brilliant attention-getting bags: MESH WIND-O PAK, POLYETHYLENE, and REGULAR, in any or all sizes. Each A&S package dramatically establishes a specific brand name. Wherever the A&S bag is seen — by Dealers — by Consumers — the unique, sales-catching Design will *bag* the sales!

Production at ARKELL & SMITHS is a *coordinated* operation. Customers are assured the best possible combination of services — materials, research, design, printing, right down the line. A&S delivers the goods, *when and where* needed.

No matter what the package, A&S sells *more* than bags. With almost a century of practical, profitable manufacturing and merchandising know-how, ARKELL & SMITHS — the oldest name in paper bags — provides *experience and imagination*.

Contact A&S for any and all of your diverse packaging needs.
The famous ARKELL & SMITHS Package Engineering Department
will take over your problem.



ARKELL and SMITHS

For additional information write to Arkell and Smiths, Packaging Division, Canajoharie, New York

PLAIN or PRINTED

BAGS

WRAPS

ROLLS

"THE OLDEST NAME IN PAPER BAGS"

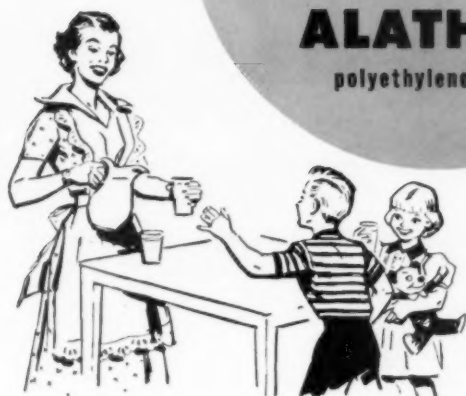
New package keeps Instant STARLAC^{*} free from harmful moisture!

NONFAT DRY MILK SOLIDS

It has a
heat-sealed,
moisture-resistant
coating of Du Pont

ALATHON[®]

polyethylene resin



Material coated by Riegel Paper Corporation, New York, N. Y.

Before placing its new *Instant* "Starlac" nonfat dry milk solids on the market, the Borden Company, working closely with its suppliers, developed an additional package for its nonfat dry milk solids. The texture of new *Instant* "Starlac" would sift through most packages, so precautions were taken along these lines. It was also necessary to take precautions against moisture, because once the moisture content of the powder rose above 3.5%, undesirable lumping would occur.

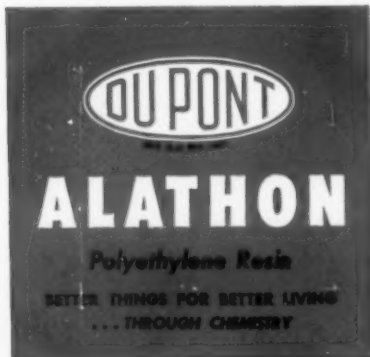
Several packaging ideas were tried experimentally and found wanting. Then a package consisting of a one-pound board carton with an inside bag was designed. The bag is made from a lamination

of two base materials and two coatings of "Alathon" polyethylene resin. The construction of the bag, from the outside to the inside, is as follows: pouch paper, "Alathon," aluminum foil and "Alathon."

The one coating of "Alathon" bonds the paper to the foil. The other coating of "Alathon" of one mil thickness on the inside of the bag permits trouble-free, sift-proof heat sealing. This coating also keeps the super-fine powder in and locks moisture out. In addition, "Alathon" contributes strength and flexibility to the package during the forming operation.

Perhaps the unique properties of coatings of Du Pont "Alathon" will solve your packaging problems. For full information, mail the coupon below.

^{*}REG. U. S. PAT. OFF.



Which type of
package are you
interested in?

- ☐ Multi-wall bags
- ☐ Single-ply bags
- ☐ Pouch bags
- ☐ Board cartons
- ☐ Board trays
- ☐ Fiber drums
- ☐ Corrugated boxes
- ☐ Fiberboard containers

E. I. du Pont de Nemours & Co. (Inc.)
Polychemicals Dept. 516, Du Pont Bldg.
Wilmington 98, Delaware

Please send me information on the properties and advantages of "Alathon" polyethylene resin.

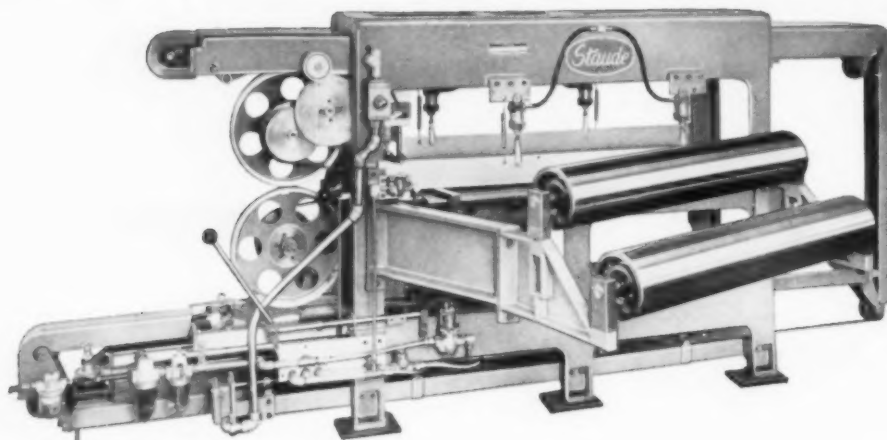
Name

Title

Company

Address

City State



butt splices

IN LESS THAN A SECOND WITHOUT STOPPING YOUR PRESS!

Staude's Automatic Butt Splicer gives you:

- Continuous, uninterrupted press operation . . . eliminates splicing downtime . . . increases production.
- Web waste limited to narrow splice area only.
- Designed for all web-fed paper board presses . . . handles webs up to 46".

Staude's Automatic Butt Splicer keeps your presses rolling even while the web is being spliced. It works this way:

The Butt Splicer is placed in line between the roll stand and the press and straddles the web. When it is necessary to splice the old and new web, the splicer clamps them together . . . cuts both webs . . . removes waste ends . . . tapes old

and new webs together top and bottom . . . makes a butt splice . . . releases clamps . . . *all in less than a second!*

During the splicing interval, the press is fed from a free loop. The Staude Butt Splicer can be used on any continuous web fed operation.

Get complete details on this big money saver . . . write for specifications.

E. G.

Staude

MANUFACTURING COMPANY, INC.

2675 UNIVERSITY AVENUE • ST. PAUL 14, MINNESOTA



LONDON REPRESENTATIVE: MR. W. T. GIBBS, 33 Firs Drive, Cranford, Middlesex, England



shows to sell



seals to protect

"Controlled visibility" means SALES for you in **MILPRINT mullinix**

No matter how good that "first slice" looks or tastes, it's the memory of the last slice that brings a customer back to your brand for the repeat sale!

And that's where Milprint Mullinix Peek-A-Boo packages put sales magic to work for your bacon and pork sausage . . . with the flap that lets your customer see all their taste and eye appeal . . . yet keeps

them completely protected from light and air, retains flavor and freshness *right to the last serving!* Try Mullinix packages

designed and produced with the Milprint touch . . . with lifelike, mouth-watering rotogravure illustrations.

For all your packaging needs—for the widest variety of packaging materials and printing processes available anywhere, call your Milprint man—*first!*



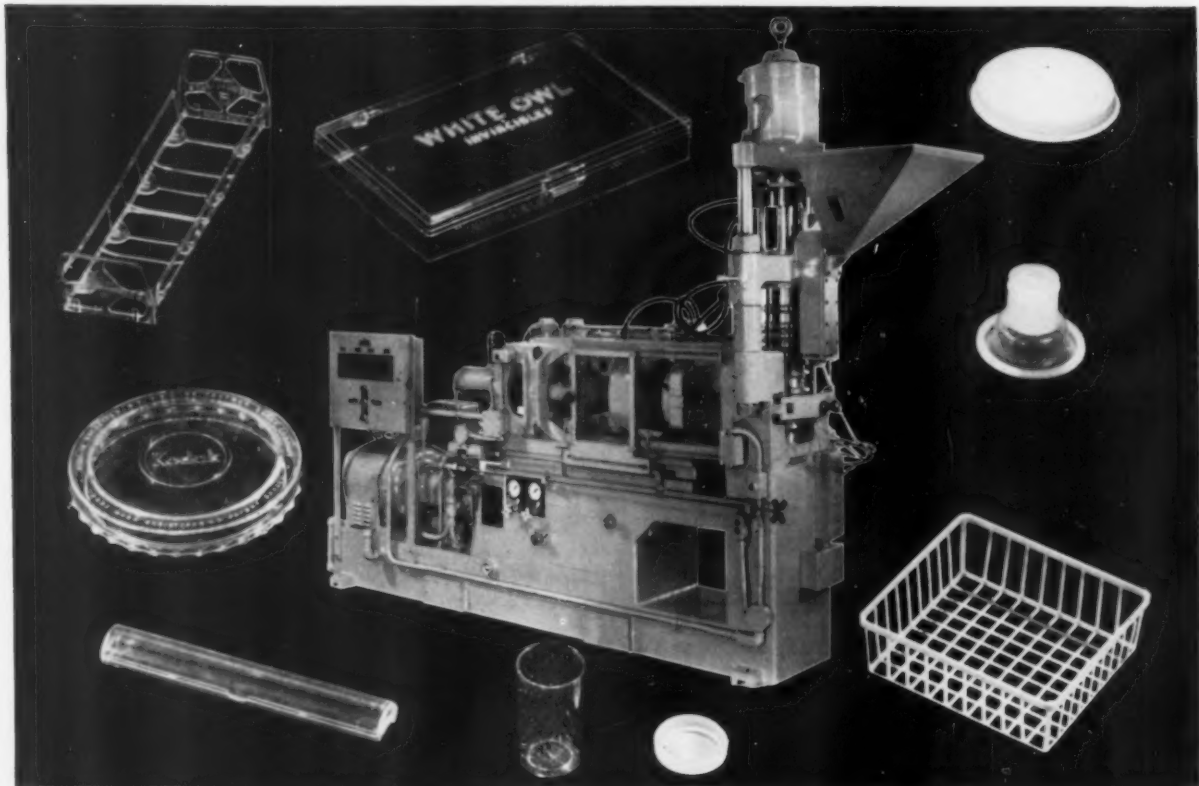
Milprint* INC.
PACKAGING MATERIALS
LITHOGRAPHY & PRINTING

General Offices, Milwaukee, Wis.
Sales Offices in Principal Cities

Printed Cellophane, Pliofilm, Polyethylene, Saran, Acetate, Glassine, Foils, Mylar, Folding Cartons, Bags, Lithographed Displays and Printed Promotional Material.

*This insert printed by Milprint, Inc. *Reg. U. S. Pat. Off.*

FINISHED PLASTIC PACKAGES from a SINGLE MACHINE...



**Lester AUTOMATIC
Injection Molding Machines**

Lester AUTOMATIC Injection Molding Machines are in fact miniature factories for producing finished plastic packages at a single station. They are self-contained units, equipped to run as individual machines, or in batteries attended by one operator.

Once the mold is installed, the proper temperatures established and the timers set for automatic repetition of the cycle—you can

almost forget them! A variety of automatic controls and safety devices are available to assure you low-cost, round-the-clock continuous production.

If you want assistance in planning your molded plastic packaging production—we'll be happy to work with you—from consultation on the mold to getting your installation running. Give us a call.



LESTER INJECTION MOLDING MACHINES

REPRESENTATIVES

New York Steven F. Krould	Cincinnati Index Machinery Corp.
Detroit M. R. Tenenbaum	Los Angeles Machinery Sales Co.
Chicago J. J. Schmidt	St. Louis, Milwaukee A. B. Geers
Cleveland Don Williams	Providence Sydney W. Lahman
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Toronto, Canada Modern Tool Works, Ltd.
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distributed by LESTER-PHOENIX, INC., 2712-O CHURCH AVENUE • CLEVELAND 13, OHIO

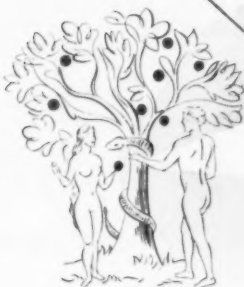


If you're proud
of your product,
package it in

REYNOLON

polyethylene

FILM



Apples have always been tempting but today are even more so—especially when they're packaged in Reynolon Polyethylene Film. Reynolon hides nothing—actually enhances the appearance of apples and other fruit because it's super clear . . . consistently clear . . . and is the "pick of the packaging crop" when it comes to reproduction of top design and printing.

Apples stay delicious longer and bring premium market prices longer, too, when they're Reynolon packaged. The humidity inside the bag keeps apples fresh and firm. Consumers get better fruit quality and growers get top dollars for their crops.

Reynolon Plastic Films—Polyethylene (either treated or untreated for printing), laminates of Polyethylene and Cellophane, Polyvinyl Alcohol and Polyvinyl Chloride are available in many standard specifications or can be economically produced for your specialized requirements. Our Technical Product Development Service is also available to you without obligation.



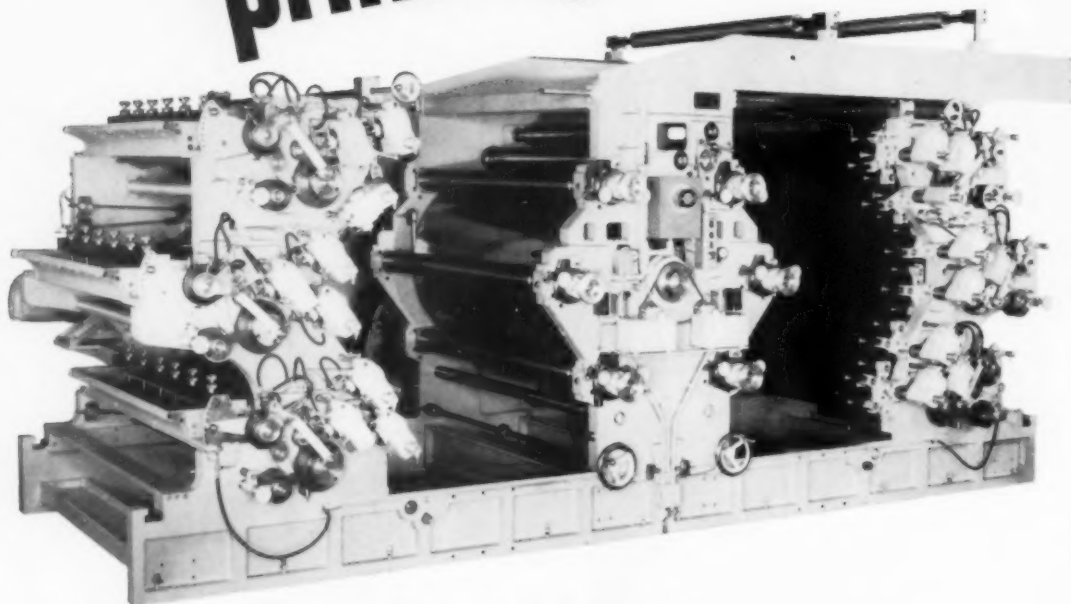
For complete information, contact your nearest Reynolds Metals Company office or write

**PLASTICS DIVISION,
REYNOLDS METALS COMPANY**

3806 GEORGIA STREET • GARY, INDIANA



you'll cut process printing costs



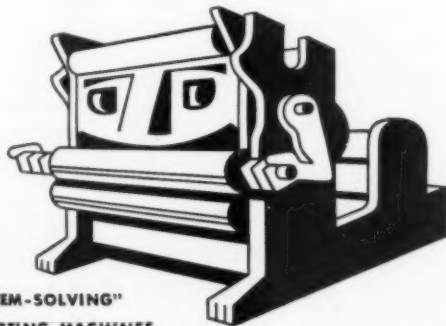
with Paper Converting's NEW 6-color rubber plate letterpress

You can beat the squeeze of rising process printing costs and tougher customer budgets by using Paper Converting's *NEW 6-color rubber plate letterpress*. Producing top quality printing at amazingly low costs, this equipment makes metal plate letterpress obsolete for most packaging printing jobs. You'll handle screens up to 120 line with perfect register and dot formation—reproduce solids and fine type sharply. Yet production costs plunge . . . thanks to economical "plant-made" plates that provide 3 to 5 million impressions, up to 20% reduced ink consumption, and as much as 15% less trim waste of paper tonnage.

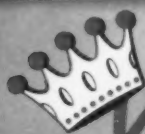
Enjoy the advantages of perfect color control, shortened delivery schedules, and highly flexible repeat lengths that *only* rubber plate letterpress equipment offers. Reduce downtime, too, by using

the special mounting and proofing unit that lets skilled pressmen concentrate on plate make-ready and proofing, permits less-skilled workers to control actual press runs. You'll minimize press make-ready time—improve service and increase profits.

Sales manager or plant superintendent, you need to know all about this 6-color rubber plate letterpress that is *revolutionizing* process printing. A card or a collect call will promptly bring you complete information on Paper Converting's newest "problem-solving" machine.



"PROBLEM-SOLVING"
CONVERTING MACHINES



King-size Profits!

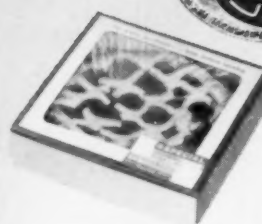
**Sell More, Make More Money with Gleaming Bright
EKCO-FOIL CONTAINER-PACKAGES!**

Here are just eight of the 105 shapes and sizes of EKCO-FOIL Container-Packages that we have in stock and can ship you immediately! Your product needs *Display Attention and Quality Protection*. Every product for which an Ekco-Foil Container-Package has been designed is earning increased sales and profits!



Perfect for mixed nuts! Also being used to package fresh salads, chili con carne, and even starter plants! Ekco-Foil fills a wide variety of food packaging needs.

For ready-to-serve meats or casseroles! Use this gleaming dish for frozen pies and fruit pies, too! No hard-to-clean dishes to wash! No casserole investments and breakage!



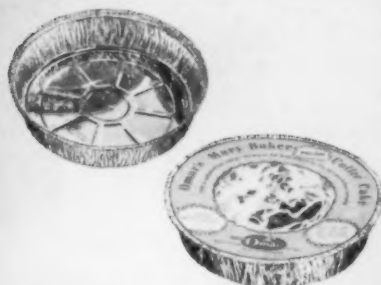
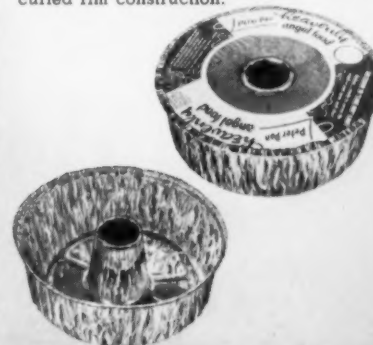
In many different sizes! Special sizes available on order. Curled rim. Try just one bakery item in it—watch the better baking, faster sales results!

Chocolate candies score sales records in this pan! Also fried fish fillets, brownie mix, and barbecued beef dinners. It may be just what your product needs.



Cakes of All Kinds taste and look best in this Ekco-Foil pan. No transferring from pan, no handling losses. In plain or green and red Ekco-Foil for Christmas cakes. Ideal for cookies and candies, too.

Another one of 105 Ekco-Foil container-packages that add eye appeal and buy appeal to your baked product. Available with vertical flange for use with covers or curled rim construction.



Creates king-size coffee cake sales! Gives greater eye and flavor appeal to rolls, candies, frozen hors d'oeuvres and many others!

Send Us Your Package!

Let Ekco packaging engineers examine it and make recommendations that can increase your profits! Process and sell in Ekco-Foil—the new package-container that makes other packaging old-fashioned by comparison! Call your Ekco salesman or distributor today!



EKCO-FOIL CONTAINER DIVISION

Ekco Products Co., Chicago 39, Illinois. Also available from Ekco Products Company (Canada) Ltd., Toronto



Sells cheese cake mix faster! Just right, too, for bakery specialties, carry-out meals and other foods. In three sizes. Vertical, flange, or curled rim.

Double Win

IN FOLDING CARTON COMPETITION..



Two highest Awards to this new flip-top boxboard package for MARLBORO long size filter cigarettes—in the 1955 industry competition sponsored by the Folding Paper Box Association of America, which attracted 6,782 entries in 4 major classifications.

Test merchandising demonstrated overwhelming public response to appealing design and functional improvements in this new pack, which has been acclaimed as "the first new concept in cigarette packaging since the soft paper package was introduced 38 years ago."

We of U-S are proud to share with Philip Morris the significant double recognition accorded this triumphant advance in the science and art of packaging.

FIRST AWARD—Superiority According to End Use—Tobacco • United States Printing and Lithograph Company • Marlboro Filter Cigarettes • Philip Morris & Company, Ltd., Inc.

OFFICIAL CITATIONS:

FIRST AWARD—Potential New Volume Use United States Printing and Lithograph Company Marlboro Filter Cigarettes • Philip Morris & Company, Ltd., Inc.





Individual Marlboro carton pack
and 20/200 display carton produced
for Philip Morris by U-S. Package
designed by Frank Gianninoto.



J. Cullman III, executive vice president, Philip Morris & Company, Ltd., Inc., (left) receives the Award certificates from W. H. Walters, president, United States Printing and Lithograph Co.



Philip Morris exhibit at National Association of Tobacco Distributors annual convention and exhibit, Chicago, features giant replica of new Marlboro pack.



The double-winning Marlboro packages, enthusiastically approved by discriminating smokers in test cities across the country.

United States Printing and Lithograph Company

EXECUTIVE OFFICES: Cincinnati 12, Ohio
Sales Offices in All Principal Cities

PLANTS: Baltimore, Md.; Cincinnati, Ohio; Erie, Pa.; Milwaukee, Wis.;
Mineola N. Y.; Redwood City, Calif.; St. Charles, Ill.

Whatever the job...



PERMACEL 29 PLASTIC TAPE

splicing or strapping



PERMACEL 15 STRAPPING TAPE

SELF-STICKING PERMACEL® TAPE

In our complete line, there's a self-sticking tape for every job . . . write Permacel Tape Corporation, New Brunswick, N. J.

a Johnson & Johnson company



"The \$\$\$\$\$\$ Ride"

No sleek, low hung lines here. No power steering. No power brakes. No turbo fire engine. But the most important ride a packer's product can take; for the packages that ride between the shelf and the checking counter go home.

That's where H-A glass packages come

in. Their shelf display value, their ease of handling, their label consciousness moves the product into the cart.

It's one of the many reasons why H-A means Home Approved. And remember, your message or recipe on a H-A closure continues to tell your story at home.

HAZEL - ATLAS GLASS COMPANY, WHEELING, W. VA.

Do You CUT or SLIT...

PAPER

CELLOPHANE

ACETATES

SYNTHETICS

FOILS, FILMS

PROCESSED FABRICS

or . . . anything that comes in rolls?

If you are not *already* using a Beck Automatic Roll Sheet Cutter or a Beck Razor Blade Slitter, chances are you're losing money.

Why not investigate the possibility of putting a Beck machine to work for you . . . and . . . save money!

Beck machines cut practically anything that comes in rolls . . .

accurately . . . quickly . . . economically.

WRITE:



CHARLES BECK MACHINE CORPORATION
406 N. 13th Street **BECK** Philadelphia 8, Pa.

Pacemakers since 1864 in the ENGINEERED APPLICATION of SHEET CUTTERS and SLITTERS

Practical, Protective Packages

by J. L. CLARK for SHEAFFERS



To advance their position among the country's leading manufacturers of writing instruments and supplies, the W. A. Sheaffer Pen Co. of Fort Madison, Iowa, required *completely new metal packaging* for their famous *Fineline* pencil erasers and leads. The new containers must be colorful, bright, and attractive, for they would be presented to the public on counters throughout the 48 states — sold by the millions — year after year . . . Sheaffer's specifications called for deep-drawn, slide cover boxes, lithographed inside and out, with large and small sizes for both erasers and leads. Easy-opening convenience and full protection to contents must be combined with sleek styling befitting the great Sheaffer name. But *who* could produce these boxes, assuring matchless quality at reasonable cost?

Sheaffer came to J. L. Clark Manufacturing Co., where packaging "know-how" born of a half century's experience turned to meet the problem. With customer and manufacturer working in close partnership, models of each container were carefully formed for additional study and refinement of package design. Clark craftsmen then planned and built special tools — a meticulous job presenting unusual dimensions and tolerances which demanded rigid precision. Equally challenging was the task of maintaining flawless quality in producing *millions* of these slender containers . . . Yet Clark's ability to design and create the finest tools and equipment *made it possible to meet all specifications economically!*

Today, custom packaging by J. L. Clark has helped Sheaffer's *Fineline* pencil erasers and leads to achieve remarkable sales success. On retail counters throughout the country, colorfully distinctive *Fineline* boxes reflect the character and quality of the products they enclose. The result is "Merchandising Magic" — *that degree of packaging perfection which enhances the desire to buy . . .* The development and manufacture of sales winning metal packaging is our business, and we are anxious to be of service to you. Your letter, call, or wire will receive the prompt attention of a Clark sales engineer.

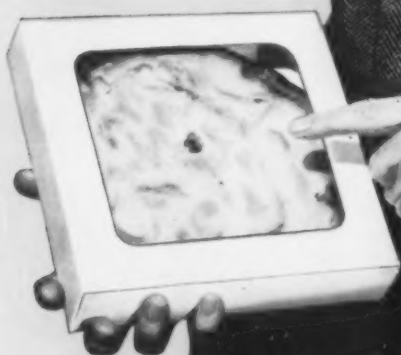


J. L. CLARK MANUFACTURING CO., ROCKFORD, ILLINOIS

Liberty Division Plant and Sales • Lancaster, Pa.
New York Sales Office • Chrysler Bldg. • N. Y. 17, N. Y.

When you make
folding cartons with

**COATED BOARD,
GLASSINE-LAMINATED
CHIPBOARD,
FILM WINDOWS**



...use

DAREX RESIN ADHESIVES

When you make folding cartons with cellulose acetate, Pliofilm or cellophane windows . . . or when you use coated or glassine-laminated chipboard . . . DAREX Resin Adhesives provide a strong, fast-setting bond.

These are more of the "problem" applications in which you can save a lot of costly experimenting by calling

in a DAREX Resin Adhesive Engineer. He knows resin adhesives. He knows the properties of the various materials with which you work. In all likelihood, he has already solved problems similar to yours . . . with resin adhesives that are strong, flexible, water-resistant, mold- and vermin-proof.

Write today for full information.

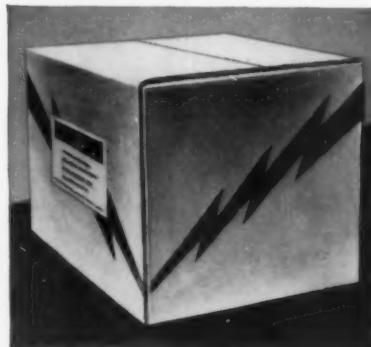


DEWEY and ALMY
Chemical Company

DIVISION OF W. R. GRACE & Co.

Cambridge 40, Mass. • Chicago 38, Illinois • Montreal 32, Canada • San Leandro, California

Adhesives for better packaging



NEATER, STRONGER, SNAG-FREE BOXES result when the manufacturers joint is *glued* with DAREX Resin Emulsion Adhesive. Other advantages are that these boxes are sift-proof and weather-resistant. Ask your box-maker about Glue-lap Boxes!



"TOPS" FOR CASE BOTTOMS is DAREX Resin Emulsion Case Sealing Adhesive. It is widely used by leading breweries to prevent case bottoms from giving way even when they're soggy or wet. Applied by standard case-sealing machines.



IF YOU USE wet strength, coated or highly calendered papers for specialty and multi-wall bags, try better-bonding, moisture-resistant, high-solids DAREX Resin Adhesives. Better quality, higher speeds can result, without increasing your unit costs.



Carton maker picks GAIRCOTE to glamorize P & T Gift Decanter

Finding the right boxboard for this Park & Tilford Christmas decanter carton was no problem for the F. N. Burt Co., of Buffalo, one of the country's leading manufacturers of fine folding cartons.

They picked Gaircote, Gair's machine clay-coated boxboard, for two reasons: First, it takes five-color lithography — plus a special gold bronze ink, *plus* an overprint of varnish — with a *brilliance* that ordinary boxboard simply can't match.

Second, Gaircote's superior bending qualities allowed solid printing over the scores with

no breaks to mar the appearance when it is formed and closed . . . and provided ample strength at the bottom of the carton for an automatic self-locking construction.

All in all, it's an attractive, safe, easy-to-handle carton that puts the P & T decanter out front on liquor store shelves everywhere.

Perhaps Gaircote can help make your carton more attractive to shoppers. Or maybe the special advantage of some other Gair boxboard would be better for you. For complete facts, check your regular boxmaker on using any Gair board.

GAIR  *boxboard*
SPRINGBOARD TO MORE SALES

ROBERT GAIR COMPANY, INC. • 155 EAST 44th STREET • NEW YORK 17, N.Y.

Just a bantamweight



*.....but does a
heavyweight's job*



Clearsite Plastic Containers are about 1/5 the weight of glass

Get feather-light Clearsite Plastic Containers into your corner and you'll "KO" the problem of shipping costs. You'll score a victory over breakage too with these strong, shatter-proof containers. Clearsite doesn't pull any punches when it comes to variety. The selection of sizes, shapes, closures and colors is almost infinite. Any trademark or label can be multi-color printed right on the containers.

Write for free samples and descriptive literature.

CELLUPLASTIC CORPORATION

GENERAL OFFICES, 50 AVENUE L, NEWARK, N. J.

The world's largest manufacturer of Cylindrical Plastic Containers

TRANSPARENT

Clearsite®

**PLASTIC CONTAINERS
that Sell**

*REGISTERED TRADE MARK



Chances are, she'll buy
the product in the
NIBROC[®]
white bag

It's as easy as ABC to see why bags made of Nibroc White move off the shelf faster . . .

A. EYE-CATCHING! The product in a Nibroc White bag stands out and catches the eye of the housewife in the modern supermarket.

B. BRIGHTER! High-bright Nibroc White makes it easier for your customer to sell the merchant his flour, rice, coffee, meal, dog-food.

C. STRONGER! From the grocer's shelf to the housewife's pantry, Nibroc White—unusually tough yet flexible—keeps and delivers your product in perfect shape.

Put more *sell* in your package. Use Nibroc White. For samples and more information, write or phone our Technical Service Division, Dept. RD-6, in Boston.

BROWN  **COMPANY**
Berlin, New Hampshire

General Sales Office: 150 Causeway Street, Boston 14, Mass.

SOLKA PULPS • SOLKA-FLOC • NIBROC PAPERS • NIBROC TOWELS
NIBROC KOWTOWLS • NIBROC TOILET TISSUE • BERMICO SEWER
PIPE & CONDUIT • ONCO INSOLES • CHEMICALS



CELLU-CRAFT

TRANSPARENT PACKAGES

are engineered to **SELL**
are engineered to **PROTECT**
are engineered to **FACILITATE HANDLING**

DEPENDABLE SUPPLIER FOR MANY YEARS. TO BUNTE BROS. - CHASE CANDY CO.

Phone or write for a Cellu-Craft Packaging Consultant.

"CREATORS AND PRODUCERS OF PERFECT PACKAGING AT LOWEST COST"

CELLU-CRAFT PRODUCTS CORPORATION

DESIGNERS, CONVERTERS, AND COLOR PRINTERS OF FLEXIBLE PACKAGING MATERIALS

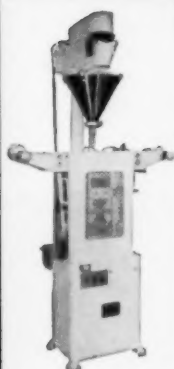
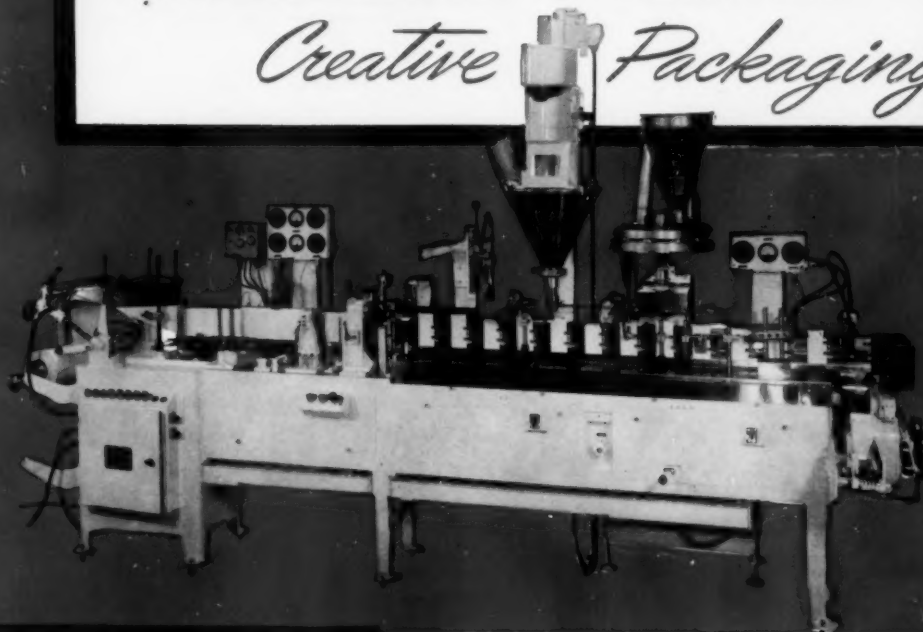
General Offices & Plant: 1401 4TH AVE., NEW HYDE PARK, N. Y., PRIMROSE 5-8000 • Branch Plant: ADDISON, ILL. • Sales offices in principle cities.

BAGS • ENVELOPES • SHEETS • ROLLS • CELLOPHANE • POLYETHYLENE • PLIOFILM • FOILS • ACETATE • PLASTIC FILMS • GLASSINE

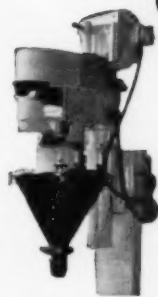
Success of aerosol

BARTELT EQUIPMENT FOR

Creative Packaging



Junior Packager



Bartelt Filler



Checkweigher

Building an Automatic Packaging Line

New products? Plan your production line for the future! Start with a Bartelt Filler on a semi-automatic line, which can later be adapted to a Bartelt Junior Packager or a Bartelt Packaging Machine. If your finished flexible packages go into a carton an automatic Display Packer can be added at a later date to set-up the carton and insert the packages. Dollars invested in capital equipment can be spent for a program of growth leading to equipment like the above versatile machine. Let us help you plan your package and packaging facilities for the soundest overall expenditure.



BARTELT ENGINEERING CO.

1900 HARRISON AVENUE
ROCKFORD, ILLINOIS

New York Office, 420 Lexington Ave.

Write today for latest literature

Success of aerosol the importance of



suntan sprays shows a working package

*Ask Du Pont how aerosol packaging can
add new sales appeal to products*

Sales records of aerosol suntan lotions show clearly how important a role packaging can play when the package is *more* than a container. People buy aerosols because they like aerosol dispensing—they like aero-

area can give you the benefit of their experience with a wide variety of products. And, as manufacturer of "Freon"* propellents—by far the most widely used aerosol propellents—Du Pont can put at your service

a sound background of aerosol know-how and can help you work with contract loaders when basic formulation work is completed.

Our experienced chemists can help you determine whether a product you are interested in is suitable for aerosol dispensing, or can be adapted to it. Annual surveys of the retail and consumer aerosol market have provided Du Pont with a fund of research data that will help you plan marketing and distribution policy. And we can help you with technical assistance in formulation, especially in the selection of the aerosol propellant best suited for

the product you have in mind. We've developed many "Freon" propellant compounds, and one of them will offer the pressure, solvent, stability and other characteristics your product demands.

It will pay you to take a long and careful look at the aerosol market. Take the first step by mailing the coupon below today.

aerosol package is more than just a package



BUT, above and beyond protecting the product, an aerosol package is new and interesting. It catches the customer's eye. And there's plenty of room for an informative, sales-clinching label.



ANOTHER AEROSOL-PACKAGE advantage gives your product a sales point that goes right home with the customer—convenience. Pleased with your easy-to-use aerosols, your customer buys again!

sol neatness and speed, convenience and effectiveness.

This strong acceptance has led many manufacturers to study the aerosol field with interest, and it may well profit you to do the same. When you're evaluating aerosols, there are two excellent sources of information and help available. Contract loaders in your



FREON

SAFE PROPELLENTS

"Freon" is Du Pont's registered trade-mark for its fluorinated hydrocarbon propellents



Better Things for Better Living... through Chemistry

PIN THIS COUPON TO YOUR COMPANY LETTERHEAD

E. I. du Pont de Nemours & Co. (Inc.)
11500 Nemours Bldg., Wilmington 98, Delaware

- ☐ Please send me your booklet on aerosol packaging, "Package for Profit".
- ☐ I am interested in market-research data.
- ☐ I am interested in learning how I can get technical assistance.
- The type of product I have in mind for aerosol packaging is _____

Name _____

Position _____

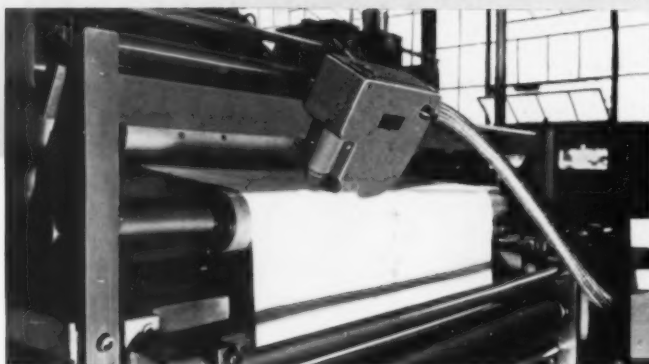


186

designed for
your
press protection

the new Champlain photoelectric REGISTRON

gives positive, accurate web registration
from one central control point



The web scanner monitors the web, predicts an off-register condition before the cylinder is reached.

Developed, perfected and manufactured by one of the oldest, most reliable builders of rotary presses and auxiliary equipment, the Champlain REGISTRON assures constant printing accuracy with minimum handling. Not only printing but cutting and blanking operations too can be kept in perfect register — protecting you against unnecessary stock losses — providing unerring electronic supervision regardless of web speed. And this pinpoint control can be achieved from a single central point with a minimum of adjustments.

Master control panel, super-sensitive web scanner, cylinder phase detector, and individual control unit—all are compactly and sturdily constructed for maximum operating life, greatest money saving efficiency, and simplest maintenance requirements.

As the only manufacturer of presses currently producing a registering "eye", Champlain offers years of experience in solving your specialized problems, in helping you turn out the high quality production your customers demand. To other outstanding Champlain advantages add to your production line these benefits of the REGISTRON:

- no clear web track or printed register mark needed — no edge waste or side trim.
- advance phasing at standstill possible — no loss of misregistered stock.
- independence of web speed of photoelectric phase detector (Champlain patented).
- independence of color variation in the copy — a Champlain exclusive.
- no limit to number of press units centrally controlled from convenient location.



Remote master control panel at delivery end of a Champlain 8-color, 36" rotogravure press. All registration is controlled from this point.



Champlain & C

Champlain manufactures a complete line of rotogravure, flexographic, rotary letterpress and allied equipment for packaging and specialty printing.

Champlain's Electronics Department is staffed with able and experienced engineers — men thoroughly familiar with the development and application of special electronic equipment in printing and packaging operations. Look to Champlain for engineering planning assistance, for all press requirements, and for such auxiliary equipment as sheeters, cutters—creasers, dryers, special fabricating machinery and electronic controls.

Write today for catalog of Champlain press equipment and full information on the new Champlain photoelectric Registron. Champlain Company, Inc., 88 Llewellyn Ave., Bloomfield, N. J. Chicago office: 520 N. Michigan Ave., Chicago 11, Ill.



Constance Bannister Photo

now . . . a package that **defies cold**

VISQUEEN[®]

polyethylene film

No other film withstands extreme cold as well as VISQUEEN. Even at seventy below, VISQUEEN won't freeze or get brittle. So VISQUEEN is the leading material for flexible packages whenever low temperatures are encountered. Another reason why VISQUEEN outsells all other brands of polyethylene.

Converters of VISQUEEN are leaders in design and manufacture of flexible packages. Their skills are backed by VISKING's superior technical know-how. They can help you with all your packaging problems. The coupon will bring names of those serving your area.

VisQueen[®] film . . . a product of **THE VISKING CORPORATION**
 Plastics Division, Terre Haute, Indiana • World's largest producers of polyethylene sheeting and tubing
 In Canada: VISKING Limited, Lindsay, Ontario • In England: British VISQUEEN Limited, Stevenage

This advertisement is one of a series telling facts about VISQUEEN film.

IMPORTANT: VISQUEEN film is all polyethylene but not all polyethylene is VISQUEEN. Only VISQUEEN, produced by process of U.S. Patents No. 2461975 and 2632206, has the benefit of research and resources of The VISKING Corporation.

The VISKING Corporation, Box H6-1410—Plastics Division, Terre Haute, Indiana

Send me names of converters of VISQUEEN film serving my area.

Company

Name

State

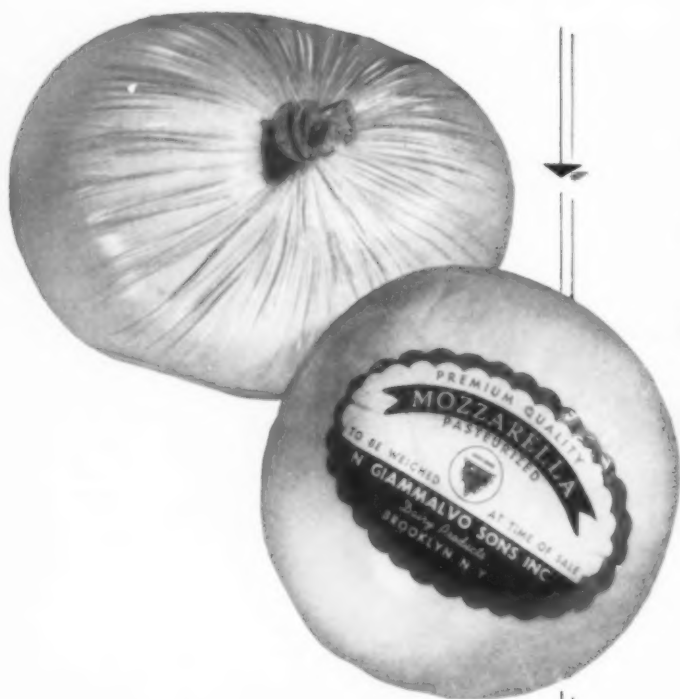
Zone

City

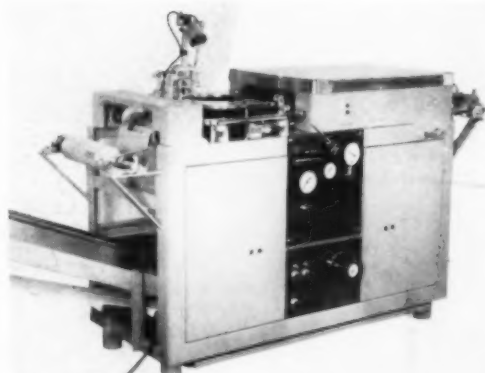
Address



**all
I want's
the facts**



more **EYE** appeal
 more **BUY** appeal
 more products **SELL**
 with
Stretchrap*



Cheese, meats, vegetables, toys and many other products in widely differing sizes are all wrapped to perfection without adjustment by the Stokes and Smith STRETCHRAP Automatic Packaging Machine.

The versatile STRETCHRAP adds buy appeal to your products by protecting them in sanitary, airtight Pliofilm. Moisture loss is reduced, as is spoilage or handling damage. At speeds to 15 per minute, one operator packages odd shapes and sizes in an eye appealing, tight, wrinkle-free "skin" on the improved STRETCHRAP.

In a recent test, a STRETCHRAP package outsold several others by 8 to 1 . . . can you afford not to STRETCHRAP your products? Write today for complete details.

*STRETCHRAP—T.M. Stokes & Smith Co., Philadelphia, Pa. PLIO-FILM—T.M. The Goodyear Tire and Rubber Co., Akron, Ohio.



STOKES & SMITH CO.

4904-E SUMMERDALE AVE., PHILADELPHIA 24, PA.

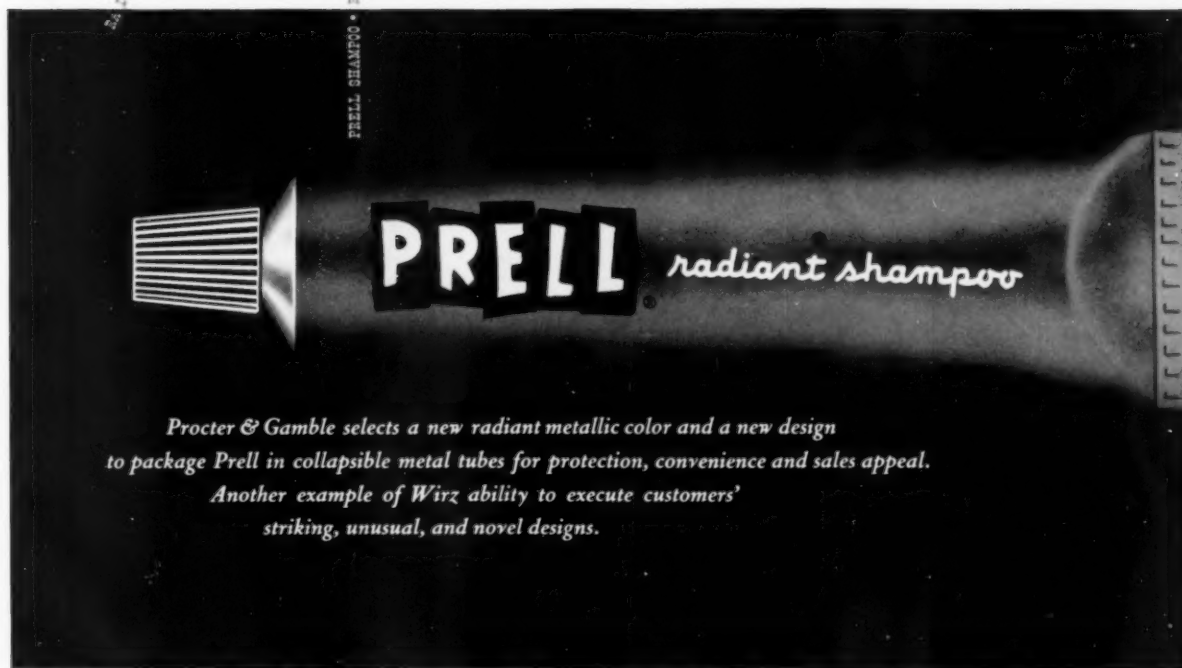
Pacific Coast: SIMPLEX PACKAGING MACHINERY, INC., 334 - 23rd AVE., OAKLAND 6, CALIF.



SUBSIDIARY OF FOOD MACHINERY AND CHEMICAL CORPORATION TRADE MARK



... IN A RADIANT TUBE BY WIRZ



COLLAPSIBLE METAL TUBES AND PLASTIC MOLDING

Fourth & Cole Streets, Chester, Pa.

New York 17, N.Y.
50 E. 42nd St.

Chicago 4, Ill.
80 E. Jackson Blvd.

Memphis 2, Tenn.
Wurzberg Bros.

Los Angeles 48, Calif.
435 S. La Cienega Blvd.

Havana, Cuba
Roberto Ortiz & Son

Export Div.—1010 Schaff Bldg.
Philadelphia 2, Pennsylvania

JUNE 1955

It's easy to see why
this family buys the
new GIANT size
bottle of
Sprite® *



Sprite helps Mrs. Homemaker to have sparkling dishes and glassware . . . shining pots and pans.



Sprite works with Sis in laundering her woollens, rayons, silks and nylons.



Sprite aids Dad in washing the car by removing dirt, oil and road film.

This product is sealed with Crown Closures, known by packers and manufacturers as the finest caps on the market . . . and with good reason. Crown Closures work smoothly on the production line . . . do the sealing job *right* . . . are lithographed in eye-catching, scratch-resisting inks . . . have the convenience consumers want.

Before you place your next closure order, have a talk with your Crown Representative . . . he can tell you why Crown Closures are unmatched from *every* angle. Crown Cork & Seal Company, Inc., Closure Sales, Baltimore 3, Maryland.



* Sprite is made by Sinclair Manufacturing Company, Toledo 7, Ohio.

Approved by millions of housewives

CROWN CLOSURES

Great Things Happen

IN SET-UP

BOX PLANTS

**COSTS DOWN
OUTPUT UP
WITH KNOWLTON MACHINES**

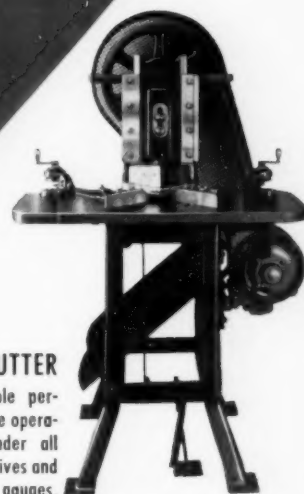
Beset by rising costs, more and more set-up box men are turning to Knowlton for help. The reason? They've heard (*and correctly*) that Knowlton machines are solving production problems and making new profits possible—that users enjoy *important savings* in time and material—turn out quality boxes that have what it takes in today's tough competitive market.

Why not call in your nearest Knowlton man for a complete study of your present operation? The chances are he can recommend a cure for your own particular headache.



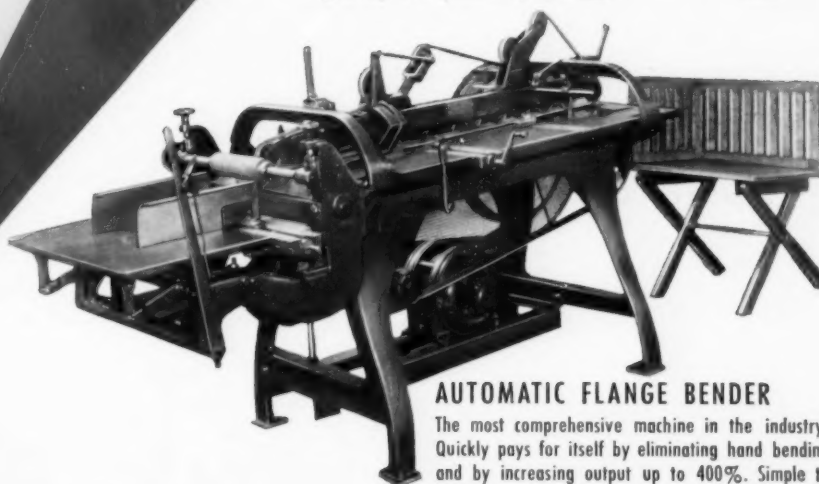
NO. 5 STAYER

Designed, engineered, and built for outstanding service. Applies stay tape up to 1" wide on boxes from $\frac{3}{8}$ " to $4\frac{1}{2}$ " depth.



SINGLE CORNER CUTTER

Unmatched for dependable performance and fast, accurate operation. Minimum waste under all cutting demands. $5\frac{1}{2}$ " knives and gear-adjustable precision gauges.



AUTOMATIC FLANGE BENDER

The most comprehensive machine in the industry. Quickly pays for itself by eliminating hand bending and by increasing output up to 400%. Simple to operate—one hand-crank makes all adjustments.

**M. & D.
Knowlton
COMPANY**

ROCHESTER 14, NEW YORK

BOSTON
627 Massachusetts Ave.
(ARLINGTON)

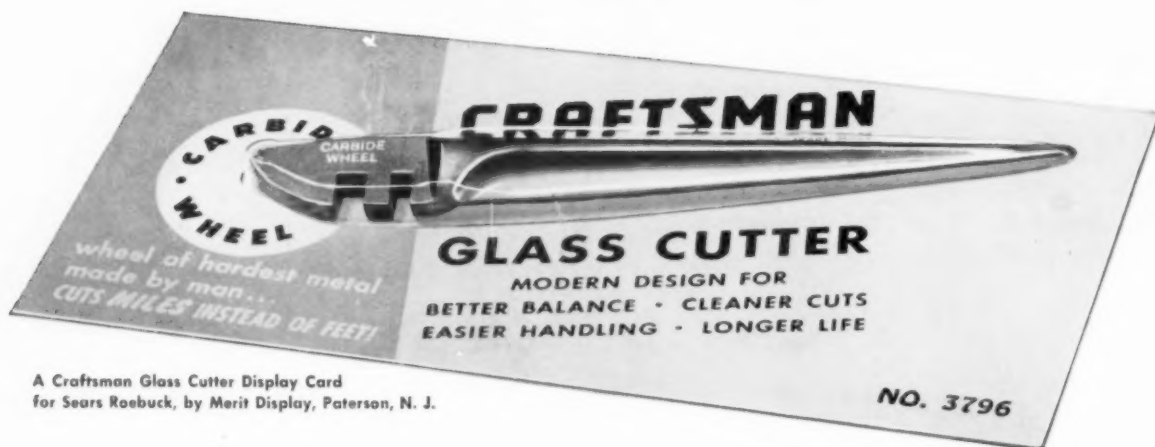
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A Craftsman Glass Cutter Display Card
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make shoppers feel impulsive!

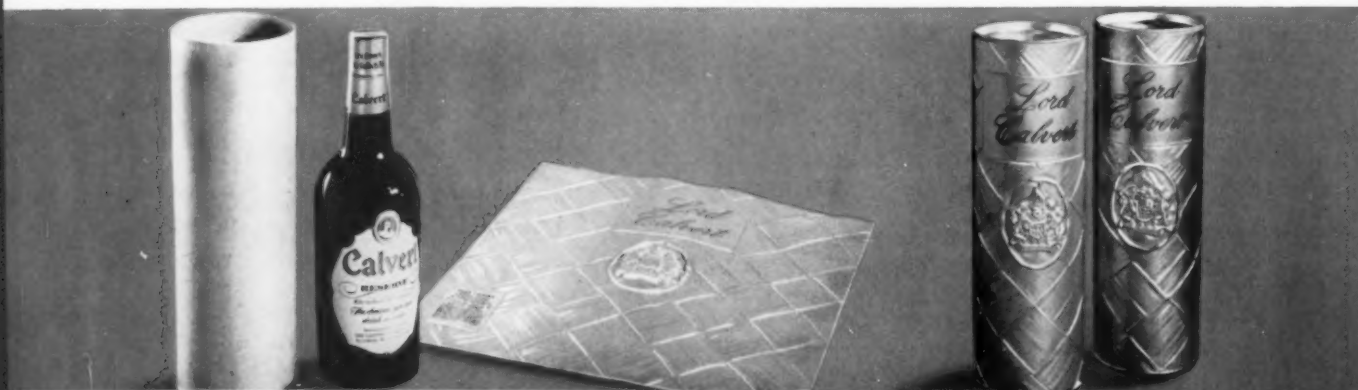
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The Celanese Product Development Department can tell you what you want to know about probable costs, and put you in touch with fabricators who specialize in this rapidly expanding production method.

Celanese Corporation of America, Plastics Division, Dept. 108-F, 290 Ferry Street, Newark 5, N. J. Canadian affiliate, Canadian Chemical Company, Ltd., Montreal and Toronto.

Calvert Display Container, by King Plastic Products, College Point, L. I.





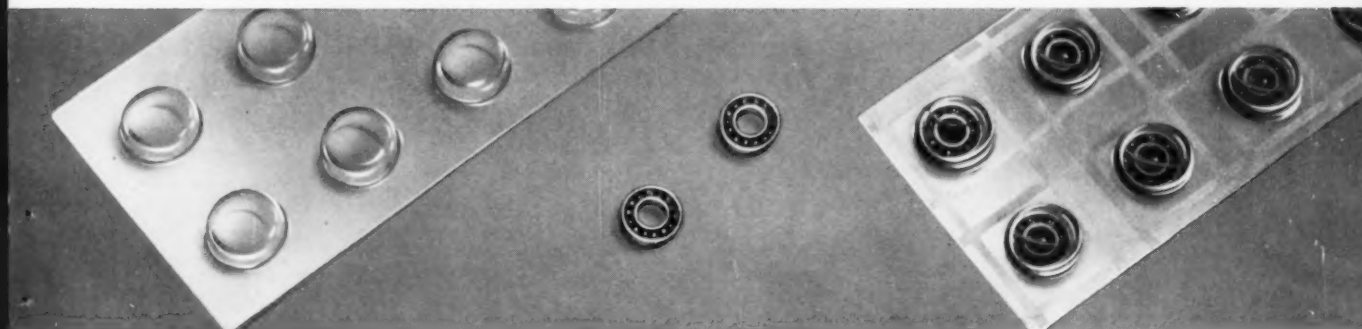
HY-PRO tap container, by William Crook Co., Watertown, Mass.



Nordic Plastics Corporation, Brooklyn 17, N. Y.



Store display for Schweppes, by Majestic Creations Inc., Woodside, L. I.



The reproduction above illustrates a new concept in protective containers. Acetate is ideally suited to packaging bearings and other precision parts which require oil bath protection. It exhibits outstanding oil resistance characteristics—even for synthetic oils and greases. The transparency of the acetate provides a means for visual inspection at all times.

This tested packaging method permits contents to be individually sealed and opened separately... reduces pilferage. Special heat sealing machinery for this application has been developed by Packaging Industries Ltd., Montclair, New Jersey.

Celanese Market Development Department has this packaging method under laboratory and field tests. If you are now packaging precision parts requiring protection against corrosion, Celanese will be glad to work with you in developing a formed container applicable to your needs.

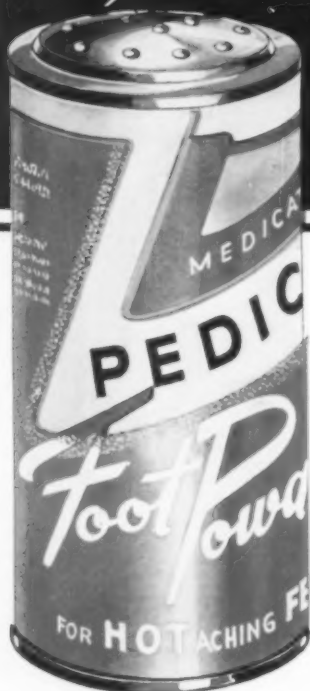
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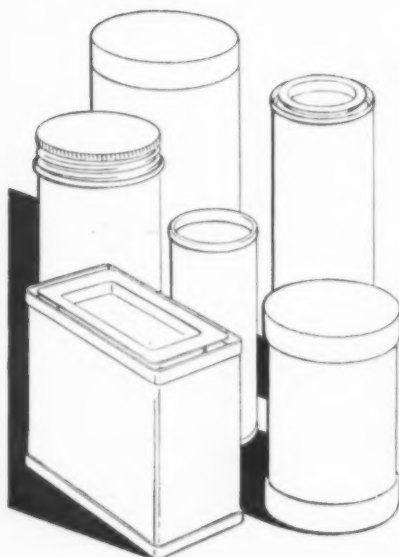
The Functional Packages illustrated here are: a sifter top container which dispenses foot powder; a perforated moth cake holder, to hang in a closet, which permits vapors to escape; an efficient container which serves as a spray gun for the effective spreading of insecticide powder.

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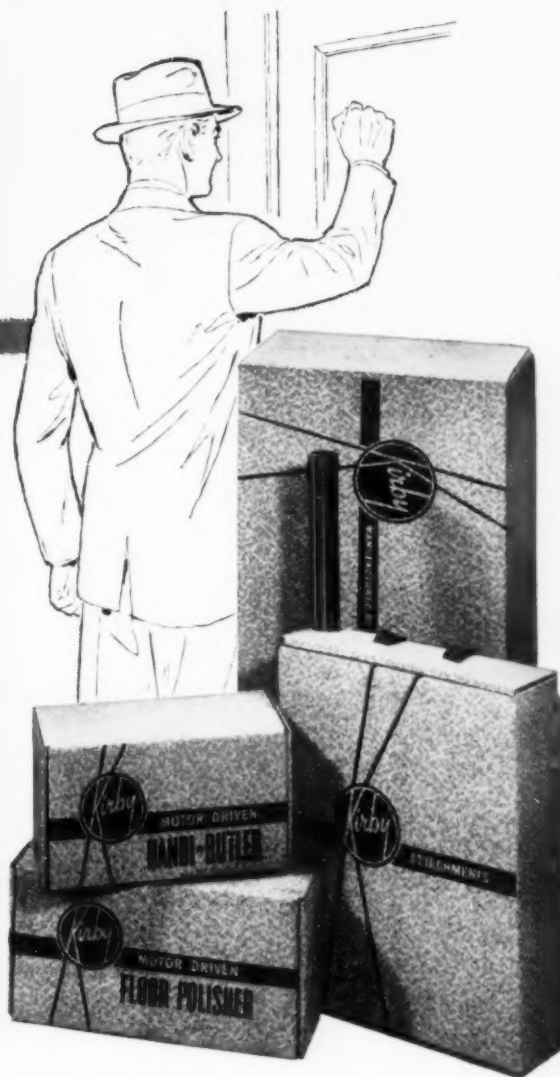
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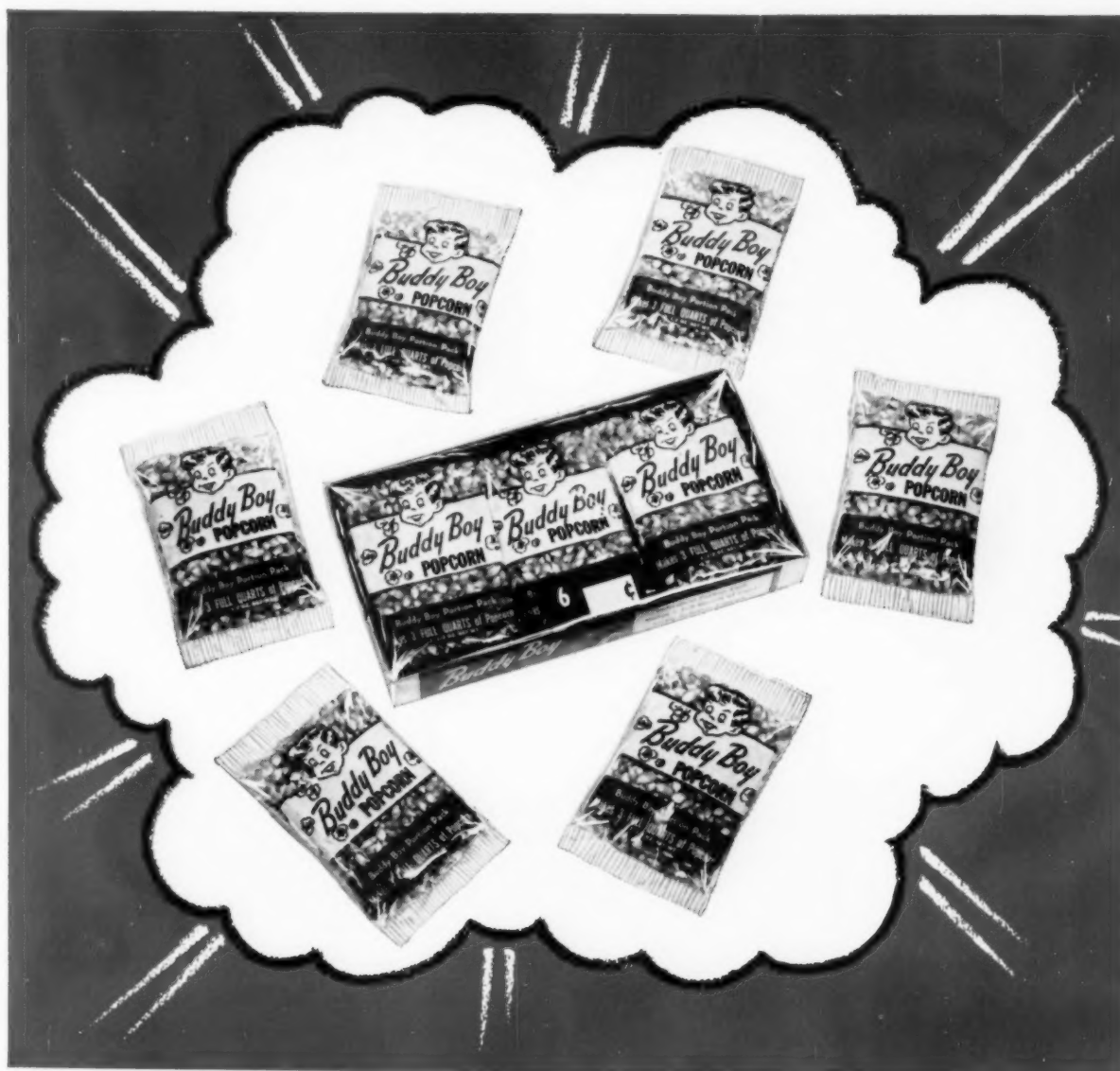
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THE GARDNER GALLERY OF

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Buckeye Bait Corp.—Buckeye Fishing Bobbers Display—Vendor Carton

Won—Merit Award—"Display Dispenser" category—Folding Paper Box Association of America 1955 annual competition.



The Kroger Co.—Kroger Oyster Cracker Cartons; One Pound and Seven Ounces Sizes

Won—First Award—"Bakery Products." Folding Paper Box Association of America 1955 annual competition.



Sears, Roebuck & Co.—Harmony House Wallpaper Dispenser Tray

Won—Merit Award—"Hardware" category—Folding Paper Box Association of America 1955 annual competition.



**Weco Products Co.
Dr. West's Denture Brush
Pyramid Display**

Won—Merit Award—"Superiority of Construction" category—Folding Paper Box Association of America 1955 annual competition.

The Leshner Corp.—Wip-Eez Roll Dispenser Carton

Won—Merit Award—"Potential New Volume Use" category—Folding Paper Box Association of America 1955 annual competition.



QUICK FROZEN

QUICK SELLING

In reviewing these outstanding cartons, note that winners in three current competitions are included: Folding Paper Box Association of America 1955 Annual Competition, Package Designers' Council 1954 Awards Competition, and the Variety Stores Annual Packaging Competition.

Such widespread success in three different fields indicates a versatility in carton design, construction, and manufacture that can prove as useful to you as it does to so many other leading producers of packaged products. There's a Gardner packaging specialist near you. Call him!



Sears, Roebuck & Co. Cross Country Plant Group, Rosebush, Flowering Shrub, Fruit and Vine Cartons.

Won—First Award—in the "Re-design Project" category—Package Designers' Council 1954 awards competition.



Won—First Award—"Hardware" category—Folding Paper Box Association of America 1955 annual competition.

Won—Merit Award—"One and Two Color Letter Press Superiority of Printing" category—Folding Paper Box Association of America 1955 annual competition.

These Sears, Roebuck cartons have been shown at International Packaging Expositions in Frankfurt, Germany; Liege, Belgium; Valencia, Spain.



The Geo. Wiedemann Brewing Co. Twelve Can Carrier Carton

Won—Merit Award—"Carriers" category—Folding Paper Box Association of America 1955 annual competition.



Moran Shoe Carton

Won—Silver Plaque Award—Variety Stores Annual Packaging Competition.

Anheuser-Busch Six Bottle Budweiser Beer Carrier Carton

Won—Merit Award—"Lithography; Superiority of Printing" category—Folding Paper Box Association of America 1955 annual competition.



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This appealing package design by Nashua is another outstanding example of the power of packaging to move merchandise. The pictorial quality of the Dupram French Fried Potatoes overwrap and superb printing reproduction on Nashua's high gloss Enamalock waxed wrapper attract shoppers and stimulate impulse sales.

Nor does this brilliant, true-to-life color printing ever vary in quality. Precise color control is just one of the painstaking quality controls employed by Nashua to insure faithful reproduction during long press runs and from run to run.

Why not use the "Power of the Package" to give your sales a lift. A Nashua Flexible Packaging representative will be glad to show you this packaging presentation. Nashua Corporation, 44 Franklin Street, Nashua, New Hampshire. In Canada: Canadian Nashua Paper Company, Ltd., Peterborough, Ontario.

NASHUA
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40 YEARS OF
CREATIVE PACKAGING

Does she really care?

New evidence of housewife's feeling about jar closures should awaken packagers to the importance of convenience



TWIST-OPEN EASE of the lug-type vacuum cap has found overwhelming favor with housewives in national surveys; ease of reclosure and re-use also count heavily in its favor. A new automatic capping machine makes it practical for high-speed glass packing and dozens of food packers are swinging over to it.

In practically every survey in recent years of housewives' likes and dislikes in packaging, objections to the pry-off vacuum lid on glass-packed foods have ranked right up at the top of the list.¹ Too hard to remove and too difficult to reseal effectively, they have said.

Yet, until recently, very little has been done about it. High speed and low cost on the packaging lines have been paramount objectives of food packers and the pry-off lid could not be seriously challenged on either

count. The housewife, it was felt, would simply have to live with it and like it.

Now, however, the whole question of glass lidding has been thrown open for reconsideration. Perhaps indicative of the increasing concern throughout the food field with consumer convenience factors, and influenced no doubt by a new survey which showed in unmistakable terms just how serious was the opposition to pry-off lids, a number of food packers, including the H. J. Heinz Co.,² have turned to the lug-type, screw-off vacuum cap

because of the development of a new vacuum-lug capper which for the first time reportedly makes practical the application of such caps mechanically at high speeds and at low cost. The cap can be removed, undamaged, just by turning and can be replaced the same way.

In announcing that it had adopted the lug-type metal vacuum cap for its 7½-oz. jars of pickle products, the Heinz company said the cap was "proving popular because of opening convenience and re-usability." Among 20 or more other companies that have adopted it are Old Virginia Packing Co., Front Royal, Va.; John Morrell

¹ See "What Women Like and Dislike About Packages Today," *Sales Management*, Nov. 10, 1947; July 15, Aug. 1 and Aug. 15, 1951.

² See *Design Histories*, MODERN PACKAGING, Feb., 1955, p. 109.



PRY-UP DIFFICULTY of the widely used flat vacuum cap has been a pet peeve of housewives for years. Bent lids and chipped glass are hazards and make effective reseal impossible, they say. High-speed application, now challenged by the lug-type capping machine, has been its big advantage for products packaged in glass containers.

Co., Ottumwa, Ia.; Glaser Crandell Co., Chicago; Lady's Choice Foods, Inc., of California; H. W. Madison Co., Medina, Ohio; St. Louis Vinegar & Cider Co., St. Louis; W. D. Roddenberry Co., Cairo, Ga., and Brown Miller in Louisiana, as well as half a dozen or more Canadian firms.

Its quality-control authorities had to overcome major technical difficulties in connection with the new machine, Heinz says, and no one claims that cost is yet as low as that of the pry-off type except possibly in some of the smaller sizes, but the consumer apparently is willing to pay more, if necessary, for screw-off convenience. That fact, brought out by the survey, may be surprising to packers who had thought there was no escape from the pry-off lid.

Vacuum sealing with screw-type lug caps equipped with rubber rings has been done for years, but until the recent development of the first vacuum lug capper, application has of necessity been a hand operation, therefore costly. Unlike a standard screw cap which engages with continuous threads in the jar finish, the screw-type lug cap must engage with special threads at three or four points. The lug cap thus must be positioned precisely on the jar before it can be tightened. The new capping machine, which pulls a vacuum by in-

jection of steam, centers the cap over the thread interruptions in a manner that permits tightening the cap with a quarter turn. This is a decided advantage, users say, in that the cap is secured in a shorter time than required for the longer torque on a continuous-thread cap, permitting high speeds up to 200 per minute, depending on the diameter of the caps. It also provides an easier cap to remove, as only a quarter turn is required to open it. The machine will handle jar sizes from 1½- to 5-in. in diameter and from 3 to 9 in. high.

After years of development work, all technical difficulties in the operation of the vacuum lug capper apparently have been surmounted and users report leakers at less than 0.5%.

The survey facts

Because it shows just how intensely housewives feel about package features that cause them inconvenience and how far they are willing to go to avoid them, the survey that launched the machine-applied vacuum lug cap, made by an independent research organization for one of the closure manufacturers,³ should be of interest to all packagers.

The opinions represent those of

³ Made by S. W. Wilkerson, Inc., Philadelphia, for Crown Cork & Seal Co., Inc., Baltimore 3, Md.

1,221 housewives in four major markets: Philadelphia, Boston, Fort Wayne, Ind., and Dallas, Tex.

When questioned about jar tops generally, 82% of the women interviewed said they did have likes and dislikes and 75% stated a decided preference for the screw cap. And more than two-thirds (69%) said they would be willing to pay one cent more for the jar with the cap they liked.

The chief reasons women gave for their preference were, as might be expected, that the screw cap is (1) easier to remove, (2) easier to replace and (3) makes the finest reseal.

The women were visited in their homes and asked a series of general questions on packages and closures. They were given two jars of vacuum-packed products, identical in every way except for the closure. One jar was sealed with a screw-type vacuum lug cap; the other, with a pry-up-type vacuum cap.

A week after the first interview the same women were visited again in their homes, questioned on their experience with the two jars and asked to register their specific likes and dislikes concerning the closures based on this actual experience. The second visit was made to determine women's reactions to the two different jar tops both before and after being exposed to them.

In the first interview the responses confirmed the general belief that women are well aware of package features affecting their convenience of use. When asked: Have you noticed a difference in the types of tops used on food jars? 83% answered, "Yes."

In fact, women seem to be considerably more conscious of jar tops than of the appearance or style of the jar itself. This was indicated by their answers to the following questions: "When you are buying food in jars, how much influence do you think the appearance or style of the jar itself has on your choice?" Here the answers were very closely divided, 49% saying that the appearance or style of the jar affects their choice, while 50% said that it did not. The question was unanswered by 1% of those interviewed.

When asked what different types of jar caps they had noticed, the housewives interviewed were overwhelmingly aware of the two most commonly used types of closures, 80% saying they had noticed screw types and 79%, pry-ups.

A total of 58% said they definitely did not like pry-ups. Their answers as to why they did not like them were: 42% because pry-up lids are hard to open and close, 39% because they reseal poorly and 17% because the pry-ups can't be re-used later; 8% because there is danger of breaking the glass when removing or replacing pry-up lids. (These percentages do not total 100, since they represent only the more important reasons mentioned for disliking pry-up lids and since many housewives gave more than one reason.)

The overwhelming preference for screw caps was indicated by the 75% who designated the screw cap as the preferred type when asked, simply, "Which type do you like?"

The four chief reasons given as to preference for screw caps were: screw-type lids are easier and faster to open and close (61%), they reseal better (21%), they make jars re-usable (17%) and the lids themselves are re-usable (12%). Many of the housewives mentioned more than one of these reasons.

When the researchers went back for the second interview a week later, their first question was: "Which jar did you open first?" The answers indicated that when given a choice, most housewives will open a jar with a screw-type cap ahead of a pry-up. The jar with the screw-type vacuum-lug cap was opened first by 58% of those interviewed, while 23% said they opened the pry-up jar first. The remaining 19% had opened both jars and were not sure which they had opened first.

The principal reasons given for opening the screw-type cap first were: the screw-type cap is easier to remove (and replace), 67%; or because they "just plain prefer a screw-type cap to a pry-up," 13%.

Significant data revealing that the screw-type cap apparently is easier for most women to open is indicated by the methods used to open the vacuum-lug-capped jars. A total of 85% said that they opened them with a mere twist of the hands. An additional 7% said they opened them by tapping them lightly with a knife handle or other object.

There was 100% agreement among all women interviewed that, when leftovers were kept in the original jar, the lug-type cap was "easy" to replace. In contrast, half the women found the pry-up cap "hard" to replace. When

THE HOUSEWIVES' VOTE ON FOOD-JAR CLOSURES

	Survey "A"	Survey "B"
Prefer screw cap	75%	89%
Prefer pry-up lid	7%	3.5%
No preference	18%	7.5%

questioned as to the effectiveness of the reseal, 99% of all the women interviewed said the replaced lug-type closure had given a satisfactory, snug cover, while 48% said the pry-up-type cap had been unsatisfactory in this respect.

It was apparent that most housewives liked the vacuum-lug metal cap at least as well as any screw-type closure they had ever tried. When asked how it compared with other screw caps, 66% said they liked it as

well and 27% said they liked it more than others—a total favorable vote of 93%.

A final key question was: "If two jars of food costing about 20 cents each were exactly the same except for the top, would you be willing to pay one cent extra to get the top you like?" A total of 69% in the four cities said yes, they'd pay more; 11% said "maybe" and 20% said "no."

While there was some slight variation among the answers in the four cities where the interviewees were picked at random, the general pattern in each of the four cities was strikingly similar, eliminating the factor of geographical preference.

The results in this survey are substantiated, incidentally, by an earlier, private study concerning closure preference for one particular class of foods which is now almost universally packaged in glass jars with pry-off lids. This study, made by a glass manufacturer, showed that an overwhelming 89% of housewives interviewed

TWENTY-FOUR different brands of food that have already been switched to the easy-opening and reclosable vacuum lug cap now that high-speed capping equipment is available for its application.



PHOTO COURTESY CROWN CORK & SEAL CO., INC.

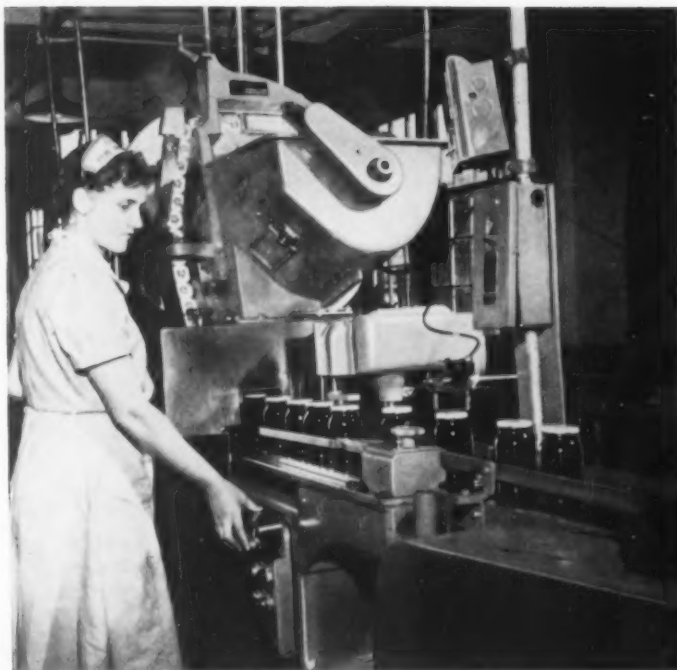


PHOTO COURTESY CROWN CORK & SEAL CO., INC.

NEW MACHINE pulls vacuum by injection of steam, centers cap over jar, secures it with quarter of a turn. This installation is at the E. D. Smith packing plant in Canada for preserve products.

PHOTO COURTESY HAZEL-ATLAS GLASS CO.



EASY-STACKING feature may be incorporated when vacuum-lug screw cap and jar base are designed to complement each other. Attractive jars for Old Virginia preserves are re-usable for refrigerator storage.

preferred a screw cap, at least for this product (one which is customarily consumed over several meals), and that only 3.5% liked the present pry-up lids. The reasons for preferring a screw cap were, in nearly every interview, the same as dominated the closure-manufacturer's study: The screw cap is easier to open and re-open, easier to close and reclose without spilling or sliding off, and both jar and cap are good for re-use.

Container preferences

Further interesting container preferences were indicated by answers to questions in the study not directly pertaining to jar caps.

Those interviewed were asked: "When you buy liquid or wet foods, what kind of container do you like best?" In all four cities, jars and bottles received highest preference for this purpose, averaging around 60%, whereas cans were specified as preferred by only 14%. Paper containers for liquid or wet products did not rate very high with the women interviewed. The highest percentage favoring paper containers was reported as 7% in the Fort Wayne area, while results in the other areas were 1% or less. Principal reasons for glass pref-

erence included visibility, convenience, freshness, better taste and re-usability.

Those who indicated a preference for cans for liquids and wet foods said they liked cans because they were unbreakable, less expensive, disposable, couldn't be opened by children, didn't leak, were easy to store—or their favorite brands were in cans and they purchased food in cans from force of habit. Favorable factors cited for paper containers were: disposability, easier and faster opening, convenience.

About 23% of the women said there were foods now packed in other types of containers which they would prefer to buy in glass. Among the types of food mentioned for which glass was a preferred container among these women were fruits and vegetables, fruit juices, baby foods, sea foods, soups, sardines, meats and sauerkraut.

Comments

Comments by the housewives interviewed were encouraged in the four-city closure study and, as usual in such surveys, they provide significant insight into the psychology and attitudes of typical shoppers and homemakers—their little fears and foibles that often don't make sense, but sometimes can make or break a product.

Here are some typical comments:

- Always looks at top before she buys and will not buy pry-up tops.
- For things she uses right away clamp-on isn't bad, but does not like them on things that she has to re-store.
- Thinks pry-up is good vacuum top, but prefers the screw-top lid.
- Especially wishes all "children's foods" (food that children help themselves to, such as peanut butter and jellies) could have screw tops for easy opening and closing so they could be closed and kept sanitary.
- Buys by brand, but would much prefer the screw-top lid and would pay for it.
- Wishes there were screw tops on all baby foods.
- Just doesn't like the pry-up lid; has upset them in the refrigerator too many times.
- Prefers screw top on catsup, peanut butter and other foods that are kept over a period of time.
- Prefers a screw type, but doesn't think it is worth a cent more.
- Discussed screw caps with

(This article continued on page 222)

Easy-to-dispense olives

New flexible polyethylene offers a new solution to filling and removal of place-packs, with some advantages

Latest idea for eliminating the exasperating chore of getting olives out of a jar is a new polyethylene holder, adopted first by Brookdale Food Co., Brooklyn, for its Bartleys brand stuffed olives, which also makes it easier to get them in.

Reportedly it has several advantages over rigid plastic "trees" previously used for this purpose.¹ It permits packing without making any holes in the olive skin. It is more economical because a smaller-sized jar can be used for packaging an equivalent amount of olives. And it reportedly saves packing time.

At the same time it permits the easy, convenient removal that consumers like. By merely lifting the patented polyethylene holder, one olive at a time or as many as desired may be removed from the jar. The remainder may be kept without waste in the jar below the brine level for future use simply by lowering the holder back into the jar. Or the colorful holder, made in one piece of extruded red polyethylene, may be removed completely from the jar and laid flat as a centerpiece on a canape dish.

In addition to consumer convenience, the new polyethylene holder reportedly has been engineered to speed up olive packing, which has always been and still is a hand operation.

The holders are designed to contain four rows of olives when the polyethylene piece, constructed with two longitudinal compartments, is partially slit in the center and folded back against itself. The holder handle for lifting is integral to the single piece, formed by the design of the slitting.

A stainless steel angle is used to rest the holders for filling. Workers place pre-determined quantities of olives in the grooves of the holders, which are placed full length on the angle. Filled holders are folded back at the center ready for insertion into

jars by means of a stainless steel hinged funnel and plunger rod.

The packer reports that within 15 minutes of demonstration, an unskilled worker can be taught to pack 10 or more dozen jars an hour, in contrast to an average of eight an hour per worker by conventional place-packing. At present, development work is under way to mechanize the operation of putting filled holders into the jars.

Polyethylene was selected as the material for the holder because it is inert to solvents, flexible, tough, non-toxic, odorless and tasteless. Much trial and error was necessary to achieve the desired shape for the holder.

The holder is light-weight, will not break or be damaged in shipment and, reportedly, gives complete protection without bruising the olive skin.

Experience indicates that the most effective package is made by using 28 of what are known as 280/300-size olives in a 6-oz. jar. The same size jar and holder, however, can also be used for 24 olives of the 240/260 size without modification.

Another important user of the package is United Grocers Co., Brooklyn, N. Y., for private-brand olives sold through its chain stores. The new holder is also being considered for other items where single removal from a jar is a convenience.

CREDITS: "Delpac" polyethylene holder developed and supplied by Del Conte Packages, Inc., 1860 E. Third St., Brooklyn 23. Holder extruded by Anchor Plastics Co., Inc., 36-36 36 St., Long Island City 6, N. Y. Jars by Tygart Valley Glass Co., Washington, Pa. Caps by Crown Cork & Seal Co., Inc., Eastern Ave. & Kresson St., Baltimore 24, Md.



LIFTING HOLDER, consumer has easy access to olives. Remainder may be lowered below the brine level.

ONE-PIECE device, extruded of polyethylene, provides two longitudinal compartments. When partially slit at center and folded back against itself, space is provided for four rows of olives.



¹ See MODERN PACKAGING, Aug., 51, p. 92.

In investigating plastics as a possible solution to the problem, Buick

like after spraying—eliminates thinning out on high spots and sharp con-

in the photographs. The operation begins at the loading section of the unit,

UNCOATED



COATED



BRIGHT PARTS, stainless steel and chrome molding strips for Buick cars, need protection from denting and scratching as well as quick identity in repair-shop racks. Both features are obtained with translucent vinyl-plastisol coating, automatically sprayed on at a rate as high as 1,500 pieces per hour. Tough coating readily peels off prior to use.

Plastic skin for parts

Mechanized system of spraying on vinyl plastisol as a strip coating solves Buick's problem of protecting bright-work replacement parts

Through the adoption of a specially formulated vinyl plastisol coating for stainless steel and chrome moldings, Buick Motor Division, General Motors Corp., has greatly increased the efficiency of its protective packaging program for this type of parts, reduced the amount of storage space required for the parts and eliminated the problem of concealed damage encountered under the packaging method previously used.

During recent years, the Buick service parts warehouse has been packaging approximately a million moldings annually and the volume has been increasing, creating a serious bottleneck in the packaging or unitizing section of the warehouse. Ranging in size from 6 to 96 in. in length and from $\frac{3}{8}$ to 12 in. in width, the moldings are of various gauges of metal. Some of them are functional in nature and others essentially decorative. Because of their highly polished

finish, these parts are susceptible to abrasion and impact damage and must be adequately protected prior to shipment.

Buick's packaging problem for such parts is complicated by the fact that the material is not received on a standard volume-per-day basis, with the result that at times thousands of pieces are on hand for processing. In the past, Buick packaged the moldings by inserting the individual pieces into various types of paper tubing which had been cut to length, printed or labeled for identification, and folded or stapled at the ends for closure. Utilizing this system, a production rate of approximately 40 pieces per hour per man was obtained. This relatively slow process created serious manpower and space difficulties at those times when large amounts of material were on hand for processing.

The extent of the packaging problem may be appreciated when it is

pointed out that a normal fender molding is approximately 56 in. long. Packaging 1,000 such pieces requires more than a mile of paper tubing. Frequently, in connection with the previous packaging method, Buick encountered days when the department was faced with the task of cutting, printing or labeling and stapling ends on as much as 8 or 10 miles of tubing—plus the tedious job of inserting the moldings into the tubing.

In order to break this serious packaging bottleneck, Buick's service parts warehouse began looking for an improved method which, while inexpensive, would provide adequate protection for the moldings against scratches, nicks and dents. Requirements also called for a method which would permit fast and easy application of packaging protection with a minimum of labor. In addition, it was necessary that the method incorporate ready identification of the parts.

In investigating plastics as a possible solution to the problem, Buick packaging engineers found that a choice of several methods and materials was open to them. Some of the materials were applied by spraying, while others called for dipping or flow coating onto the parts to be protected. Plastics were available which could be applied hot or cold. Heat fusion, oven drying and air drying were evaluated in connection with a choice of material and application methods. Solvent and non-solvent types of plastics were among those investigated.

As a result of this study, Buick packaging engineers selected a vinyl plastisol compound which seemed to satisfy all requirements. Supplied in liquid form, the material is sprayed cold onto the parts and fused into a tough, rubbery film through brief exposure to moderate heat. Once cured, the material provides excellent protection to the parts, Buick engineers say, permitting immediate visual inspection and stripping off easily when the moldings are ready to be installed. With the cooperation of two firms specializing in spraying equipment and industrial oven equipment, the Process Engineering Section of Buick's Master Mechanics Division developed the necessary equipment to apply the vinyl plastisol and cure it to its final form.

The compact unit made for this purpose, which provides for continuous spraying and fusing of the protective coating, measures about 8 ft. wide by 35 ft. long. Requiring only two operators—one to feed the metal parts into one end of the installation and the other to remove the protected parts and apply an identifying label before packing them in shipping boxes—the unit requires no more maintenance than that necessary for the average conventional spray equipment and infra-red lamp installation.

The development was the subject of a report to the recent AMA National Packaging Conference in Chicago by John S. Saylor, Buick parts packaging engineer.

The nature of the vinyl plastisol material chosen for this packaging assignment makes it particularly suitable for the Buick program. Since the material has no solvent content, the overspray is 100% reclaimable, cutting material waste to a minimum. The fact that the plastic coating is thixotropic—liquid when agitated and jelly-

like after spraying—eliminates thinning out on high spots and sharp contours of the metal parts, preventing excess drainage and producing an easily controlled thickness.

An accompanying close-up view of four of the Buick parts—two uncoated and two as they appear after application of the protective plastic coating—shows how uniformly the material is applied to the moldings.

The sequence of operations followed in applying and fusing the protective plastic coating is illustrated

in the photographs. The operation begins at the loading section of the unit, where one operator places the metal parts on the cables which form the feed conveyor. There are 15 such feed cables, spaced 8 in. apart, permitting the loading of parts ranging from 10 to 80 in. in length when arranged at right angles to the cables. By arranging the parts at an angle, even longer moldings may be satisfactorily accommodated.

Some sizes of moldings are placed
(This article continued on page 208)



CONTINUOUS CONVEYOR carries parts through sprayer and oven. Shown here is the loading end. The feed cables, which are spaced 8 in. apart, will handle metal parts ranging up to 80 in. in length.

FOUR SPRAY HEADS are mounted on this automatic transverse-travel unit which cuts off at an adjustable point, according to the length of the item being handled. The spray heads themselves are adjustable for angle and area of coverage. Recovery pans directly underneath catch excess plastisol, which is collected and recirculated automatically.



GIANT



HIGH IN THE AIR, mounted on top of a Coke machine, this giant bottle uses familiar sight of the package itself to draw customers from every part of a supermarket.



SIX-FOOT COKE BOTTLE, set up in Milwaukee supermarket by LaSalle Coca-Cola Bottling Co., is flanked here by two 42-in. replicas. Bottles are made by new molded-rubber process, act as king-sized salesmen at mass displays.

Huge reproductions
of molded rubber
bring new life to
gigantic dummy promotions
—both indoor and outdoor

MONSTER SIX-PACK is an exact duplicate of the well-known Coca-Cola carton. This one was located in Century IGA Food Market in Milwaukee, holds six 42-in. dummy bottles. A still larger carton can hold bottles that are 6 ft. in height.



package replicas

The bigger your package is, the more people will see it! Few customers in a supermarket, for instance, can miss noticing a package that is 6 ft. high. Realizing this, the LaSalle Coca-Cola Bottling Co. of Milwaukee is using 6-ft.-high Coke bottles to attract attention to its supermarket displays. They aren't real, of course, but they do represent an interesting use of the package itself as a point-of-purchase advertising medium.

A number of other Coca-Cola bottlers are doing the same thing and, almost everywhere, the use of these giant bottles is reported to be getting healthy sales increases. The Coke bottle has a decided advantage in this respect because it is certainly among the oldest and most familiar of all packages.¹

The giant-package technique is not a new display idea. These new giants of molded rubber, suitable for indoor and outdoor use, however, give new emphasis to this kind of off-beat merchandising approach. They can be made to represent not only bottles, but almost any other shape of pack-

¹ See "Coca-Cola," *Packaging's Hall of Fame*, MODERN PACKAGING, Aug., 1951, p. 78.

age. Even a wrapped loaf of bread 4 or 5 ft. long has been reproduced. All it takes for a successful promotion is a replica of a package that people can recognize on sight.

Coca-Cola techniques

Several different versions of the giant bottle have been used by LaSalle and by other Coca-Cola bottlers. Either 6 ft. or 42 in. in height, the replicas are molded out of a hard rubber compound, which makes them adaptable for either indoor or outdoor use. The reproductions are designed to simulate an actual bottle in every detail, with the liquid level line at the neck even being painted at an angle if the bottle is to be displayed in a slanted position.

Different kinds of platforms and revolving turntables are used to support the bottles, including Gargantuan copies of the familiar six-bottle and 12-bottle cartons.

A bottler who orders these replicas from The Coca-Cola Co.'s advertising department usually sets up a rotation program covering the top supermarkets in its territory. In that way the greatest benefit is obtained from each

of the display pieces. A monster bottle may be set up as the focal point of a mass display of Coca-Cola in cartons in any part of the supermarket; it may go on top of a gondola or vending machine, or even in a store window or parking lot. Some bottlers also have used them as part of their television advertising, mounted them on brackets atop their delivery trucks or set them up to attract attention to soft-drink concessions at outdoor events.

Burgermeister beer

San Francisco Brewing Co. is another important user of these displays to promote its Burgermeister beer in stores and on top of trucks.

Anywhere they are used, the replicas are based on the same merchandising principle: a familiar package can be its own best salesman. And a gigantic reproduction of that package is, naturally enough, that much better salesman.

CREDITS: All molded displays by Mold-Craft, Inc., 100 Lake St., Port Washington, Wis. Giant carry cartons by Gray Advertising Displays, Inc., 3727 N. Palmer St., Milwaukee, Wis.

AS TRAVELING SALESMAN, a reproduction of the Burgermeister beer bottle, which is another user of these replicas, rides through the streets as deliveries are made to retail sales outlets. The giant replica resembles an actual bottle, even to the angle at which the liquid-level is painted.





NEW PACKAGES for LaCross manicure instruments display the contents in contoured plastic domes which are fastened to die-cut, red-printed cards by means of label glued to the rear. Hole at the top permits rack display. One standard size of card—2½ by 6 in.—accommodates every item in the line, which makes the packaging set-up more flexible.

Label-locked domes

Carding in plastic covers is simplified for LaCross manicure items with discovery that a glue-labeling machine can do the job

Attachment of a formed-plastic dome to contain the product on a card—a big new trend in packaging¹—can be done in any one of several ways. The latest and one of the simplest is demonstrated by the new card packaging that Schnefel Bros., Newark, N.J., has developed for some of its LaCross manicure instruments.

Packagers in many fields have turned of late to the card-and-bubble combination as a convenient way to combine three-dimensional visibility with ease of handling and adequate protection. In general, these packages make use of a piece of transparent plastic sheet formed to fit the contours of an object and locked in some fashion to a printed card.

Popular methods of joining the two elements include stapling, cement bonding and the use of self-adhering, fold-over cards² to lock the bubble

in place. More recent innovations have been the heat sealing of a plastic dome directly onto a plastic-coated card, the use of hinged or snap-type lids and the new "skin-tight" vacuum-forming method which uses the product itself as a mold.³

The technique which Schnefel has developed uses nothing but standard packaging equipment. Key role in the operation is played by a widely known, standard glue-labeling machine, whose basic principle often has been utilized by packagers to help them do unusual jobs.⁴

By the use of glue, Schnefel has eliminated the higher cost of a thermoplastic or cohesive coating. And by adapting a standard glue-labeling machine to do the job, the company has mechanized what would otherwise have been a hand operation.

Although Schnefel Bros. manufac-

tures an extensive line of quality scissors, clippers and other manicure equipment, a large share of its business also comes from relatively inexpensive nail files, tweezers, etc., distributed widely through variety stores.

Carding has been a tried and proved method of packaging merchandise of this sort. And in recent years, packagers of small, variety-store items have turned more and more towards transparent plastic blisters.

Until recently, Schnefel had been packaging all its low-priced, variety-store items on cellophane-wrapped cards. Rectangular cards, printed in red and black against a background of white, were used in an assortment of sizes. Slots, into which they were inserted by hand, kept the manicure instruments in place and the card and product were wrapped and heat sealed in cellophane automatically.

This sort of package offered a reasonable amount of visibility and protection, but it still left something to

¹ See "The Rush to Formed Plastics," MODERN PACKAGING, March, 1955, p. 79.

² See "Transparent Carding," MODERN PACKAGING, March, 1952, p. 200.

³ See "Vacuum-Formed Plastics," MODERN PACKAGING, Feb., 1954, p. 108.

⁴ See "Labeler Becomes a Filler," MODERN PACKAGING, March, 1955, p. 108, and "It Pays to Improve," April, 1953, p. 172.

be desired. Since each item had to be slipped into two or more slots in its card, it was never entirely visible; and, especially with the heavier products, there was always the possibility of the card or the cellophane tearing.

Realizing that changes would have to be made eventually, Schnefel for some time had been scouting around for an improved package. The possible use of formed plastic sheet had always been intriguing, but Schnefel felt that none of the conventional methods of card-and-bubble packaging offered the right combination of good-looking package and low production cost.

Working in cooperation with the labeling-machine manufacturer and a supplier of formed plastics, however, Schnefel discovered that it was possible to lock an acetate bubble to a card with a glued label alone.

Under the system which they devised, each carded package now consists of four parts: a printed card (the front surface of the package), with an opening die cut to approximate the contours of the item; a plastic bubble, formed from acetate sheet to fit tightly around the product, with a flange on all sides running from $\frac{1}{8}$ to $\frac{1}{4}$ in. in width; the product itself, and a rectangular printed label equal in size to the die-cut card, which forms the back of the package.

Two operators assemble them. One fits the items to be packaged into the plastic bubbles and supplies them, with the open, flanged side up, to the second girl. This operator, with one hand, feeds a die-cut card into the labeler and, with the other, inserts a plastic-covered item into the opening in the card. One of the labeler's two vacuum heads holds these in position and the operator then trips a foot switch to cause a glued label to be slapped on top, locking the flange of the plastic bubble between label and card. A blast of air then ejects the finished package into a waiting hopper below the labeler.

Key to the success of this operation is the operating principle of this particular type of labeler. Each label is picked up from the feed magazine by a vacuum head. The head in this case is equipped with a platen into which has been cut an opening that conforms to the shape of the product.

This means that a portion of each label is sucked up slightly into this opening and does not receive any glue as the label passes over the glue roller. A "frame" of glue is applied to the

entire surface of the label except for the center section corresponding to the raised area of the plastic bubble. Thus, the product is untouched by glue.

Schnefel Bros. has seized every cost-cutting possibility that this new method permits. Instead of an assortment of different cards, as before, cards of one standard size, $2\frac{1}{2}$ in. wide and 6 in. long, are used for all 10 items in the current line. The 10 cards differ only as to the shape of their die-cut openings and the descriptive copy printed on them. Since plain paperboard cards are used, without any expensive coating material, it is possible to standardize on a single card that actually is somewhat larger than is absolutely necessary for some items.

Another step taken to simplify the packaging procedure is the use of a standard label for the back side of all items. This label has plenty of room for general "sell" copy for all the various Schnefel products. Because the external dimensions of the card and label are identical for all products, change-over time is cut to a minimum. All that must be done is to insert a new platen on the vacuum head which carries the labels past the gluer. This takes, Schnefel estimates, only about 20 minutes.

The plastic bubbles which Schnefel is using are pressure formed at high speed from acetate sheet. They are produced on special equipment which employs multiple male and female dies. From 20 to 30 are formed from a sheet of plastic at a $2\frac{1}{2}$ - to 3-sec. cycle. Schnefel saves money in the printing of the cards and labels by using a single color on each, but gets a two-color package by doing the face card in red, the back label in black.

A hole is punched at the top of each card to make possible wire-rack vertical display. Plans call for introducing a special rack which dealers can use to offer a complete line of La-Cross products for self-service selling.

All these things convince Schnefel Bros. that they now have a better-looking, sturdier, tamperproof package at a cost no greater than that of the old one. And this package is made possible without any special new equipment—only the ingenious use of a familiar labeling machine.

CREDITS: "Pony Labelrite" labeler by New Jersey Machine Corp., Hoboken, N. J. Formed acetate parts by Plastic Artisans, Inc., White Plains, N. Y. Cards and labels printed by Barton Press, Inc., 138 Washington St., Newark, N. J.

In your hand right now, you are holding the most trusted name in manicure instruments—America's oldest and finest for over 50 years.

The instrument you see on the other side of this card has passed through the hands of many skilled craftsmen—men who formed their skill from their fathers and their fathers' fathers.

From the finest steel, these craftsmen have fashioned this instrument so that it is perfect in its every function. Flawless in edge. No burrs, no imperfections.

You can buy this instrument with the assurance that it will give you perfect service—for it is guaranteed by La-Cross—manufacturers of the finest manicure instruments in America.

Below is a list of the many types of fine La-Cross instruments available at your dealer's. Ask for them by name. Specify "La-Cross".

Nail Files
Twoners
Cuticle Scissors
Nail Scissors
Nail Nippers
Nail Clips
Pedi-Trimmers
Cuticle Nippers
Cuticle Clips
Cuticle Pushers
Blackhead Extractors

UNIVERSAL LABEL is glued onto the back of all 10 products in the current variety-store line. Copy, printed in black, promotes all of the LaCross products.



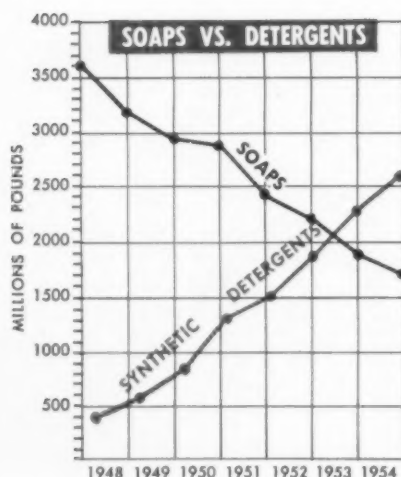
FOUR ELEMENTS in each of new packages: card die cut to shape of product; dome; product itself; label. Assembly is in that order, with label glue surrounding, but not touching, the product area. Vacuum pull of label pick-up, with specially shaped platen, makes possible the use of this selective glue pattern.



PHOTO COURTESY CHAIN STORE AGE, GROCERY EDITORS.

SOAP PACKAGES EN MASSE may overwhelm a supermarket customer. This typically big grouping of soaps, detergents and cleansers shows how individual packages, although each attractive alone, may get lost in a giant broadside of striking cartons.

Soaps and



UPS AND DOWNS of soap and detergent production over the last seven years can be seen dramatically on this graph. In 1953, poundage of synthetic detergents passed that of the rapidly declining soaps for the first time. Source: Assn. of American Soap & Glycerine Producers.

More people use soap than use any other packaged consumer product.

There are people who do not eat meat. There are people who raise their own vegetables, sew their own clothes, bake their own bread. But, except for the few farm wives who still make their own out of animal fats and lye, everyone in the country is a potential customer for packaged soaps and cleansers.

Newspaper surveys of consumers' buying habits usually discover that from 99 to 100% of the people say that they regularly buy one or more soap products. This is an amazing number of people to get to agree to *anything*, as anyone who has ever made a survey well knows.

Broad as it is, the soap and cleanser market is not spectacularly large. The Assn. of American Soap & Glycerine Producers, which compiles sales figures for soaps and synthetic detergents, estimates that in 1954 manufacturers' sales were just a shade short

of \$1 billion. The total production of the many types of specialized cleansers is more difficult to pin down, but a good guess might place it at about one-quarter or one-third of this figure.

The picture painted by dollar sales totals, however, can often be a misleading one. These figures, of necessity, cannot take into consideration the ups and downs of price levels or the radical changes which occur in the popularity of various types of products.

But the soap association also keeps track of the nation's consumption on a poundage basis. And, over the years, these figures point up one extremely interesting fact: through boom and depression, through war and peace, the average American's use of soap has remained singularly unchanged. For more than 30 years, the per capita consumption of soaps (including synthetic detergents) has never been less than 21 lbs., never more than 30 lbs. Since 1948—although, as we shall point out below, the comparative

positions of soaps and synthetic detergents have altered greatly—total consumption per person has hardly changed at all. Last year it was 25.1 lbs.; in 1948, 25.2 lbs. And, as far back as 1923, each person in the country was using 25.0 lbs. a year.

All this means, of course, that soap products as a group are very important to any kind of grocery outlet, from the "mama and papa" store on the corner to the sprawling supermarket. Although the mark-up is relatively low, soap products provide the steady, right-through-the-year demand that attracts customers in a regular procession. One trade magazine¹ estimates that the average store can count on about 3.6% of its total sales to come from 50 to 70 soaps and detergents, sold at an average gross profit of only around 10%.

The soap and cleanser industry is also very important as a user of the simpler packaging materials—paperboard, paper, glassine and, in recent years, glass bottles and metal cans. It is particularly outstanding as a consumer of folding cartons. In fact, the Folding Box Assn. of America esti-

more, in fact, than the number of separate units sold for any other product.

Historically, the development of convenient, inexpensive packaging methods has had much to do with building soap into this universally used, low-priced product.

A hundred years or so ago all commercial soap was sold in long factory bars, from which a grocer would cut off and wrap pieces to fit the needs of individual customers. To make the chore of washing a little easier, housewives soon learned that if they chipped off small pieces or grated these hunks of soaps they could get more suds faster.

It was logical that soap manufacturers should proceed to do the same thing. Toward the end of the 19th century soap chips were beginning to be sold from barrels in general stores. But in 1900 a revolutionary new development first made soap flakes available in consumer-sized packages. It was in that year that Lever Bros. introduced Lux Flakes in England.² Six years later the packaged product was being made in this country. Com-

products to compete with their old ones and reach for a greater share of the market.

And all along, an important weapon in this battle has been packaging. Big, brightly colored, flashily lettered cartons have been used in a constant war as one brand tries to snare the customers of another.

The age of detergents

This hot competitive pace, nurtured in the Depression, continued on through World War II. Then, suddenly and swiftly, a remarkable thing happened. The synthetic detergents swept onto the field of battle. And in just a few short years they have succeeded in shoving a good number of the long-

cleansers

Big, bold packages help wage the battle of the brands,
as a nation goes through a revolution in its cleaning habits

mates that manufacturers of soaps and detergents last year accounted for 14.3% of the total production of this type of packaging—one out of every seven boxes that were made. Of all the classifications of end-use products, only foods used more folding cartons than did soaps and detergents.

Still another magazine study² shows what impact soaps and detergents have as a grocery traffic-puller. This intensive survey of consumer buying in a typical group of Cleveland food stores revealed that 2,404 packages of soaps and detergents and 2,743 bars of soaps are sold each week in the average store. Added together, those figures represent a lot of packages—

peting brands appeared on the market within a few years and the race was on.

The perfection of the spray-drying method of making granulated soap broadened the packaged-soap field to include the stronger laundry varieties and the highly competitive battle of the brands shifted into high gear. With three major producers dominating the field, advertising budgets have piled up into the multi-millions (one soap company, Procter & Gamble, having for several years spent more on advertising than any other company in the country); special deals, combinations and premium offers have sprung up in ever-increasing numbers and manufacturers have introduced new



POUR OUT THE SUDS. Liquid detergent in a can has been one of the big success stories of recent soap and cleanser packaging, with Lux Liquid leading.

¹ See *Chain Store Age, Grocery Editions*, March, 1955, p. 134.

² See *Progressive Grocer*, "Foodtown Study," April, 1955.

² See "Lux Flakes," *Packaging's Hall of Fame*, MODERN PACKAGING, Sept., 1950, p. 104.



LARGER AND LARGER get the sizes of soap and cleanser packages. These are typical of trend to giant-sized units.

established soap products out of their accustomed niches. Perhaps never before in the history of American marketing has such a complete change in consumer buying of a major commodity taken place in so short a time; never has an entirely new group of products succeeded in so quickly replacing what seemed to be staple consumer items.

Synthetic detergents and conventional soaps both work in the same way, emulsifying oily wastes and wetting and holding in suspension insoluble particles of soil. But soap has one big disadvantage—it reacts with the minerals in water to form a sticky scum. It is this scum that causes the ring in the bathtub and the gray tinge on white clothes. Housewives, especially those in sections that have

hard, mineral-laden water, would put up with this only so long as they had no alternative. In order to do a really efficient cleaning job, they often had to add special water softeners to their dish or laundry water to counteract the action of the minerals.

It was hardly surprising then, that when a product came on the market that would do away with this nuisance, it found customers ready and waiting. Shortly after the end of World War II, the first low-priced, mass-distributed, intensively advertised detergents, spearheaded by Procter & Gamble's "Tide," appeared—and their rise in popularity since then has been phenomenal.

These synthetics, which do not contain the animal fats found in soap, are produced from chemicals and are not affected by hardness or softness of water, since they do not react with the minerals in the water. For consumers in those parts of the country that have been plagued with particularly hard water, the new detergents have enacted a virtual revolution in washing.

Statistically, the record of the rise of the detergents is impressive. In 1947, when the postwar detergent influx was just getting started, soaps outsold them by a healthy nine-to-one margin. In four years this had dropped to less than two to one. And in 1954 the poundage production of detergents was more than 37% greater than that of soap products and sales were considerably more than \$100 million greater. These figures, it should be noted, cover all soaps, including the toilet bars, which of course are still holding their own in sales.

As might be expected, this radical change in the soap-vs.-detergent picture has had powerful effects on the manufacturers and individual brands involved. Those soap makers who lagged in getting onto the detergent band-wagon lost considerable ground; some old, familiar brand names bit the dust. But today the three major producers are turning out full lines of detergents and a flock of smaller companies are offering increasingly strong competition in particular lines. The competitive battle royal which began with soap products continues at an ever-hotter pace among synthetic detergents, with packaging among the many important weapons being used by the embattled manufacturers.

The package as a weapon

Against this background of wildly swinging consumer preferences, packaging has remained surprisingly stable. True, there have been a number of interesting new developments in recent years, the potential ramifications of which may be far reaching. We shall discuss them in greater detail a bit further on. But, in the main, packagers have relied on a group of time-tested devices: the colorfully printed folding carton for granulated and flaked products, the glassine and paper overwrap or simple paperboard carton for bars, the metal-end paperboard sifter can for household scouring powders.

In a hotly fought brand battle such as that taking place in the soap and detergent industry, there is little margin for experimenting with expensive packaging frills. The classic folding carton, which can be set up



MOST DRAMATIC STORY in recent merchandising of toilet bars has been the striking success of Armour's Dial, which now is said to lead all other toilet bars in total dollar volume. Other deodorant soaps have begun to follow it onto the market.

GLEAMING GOLD-COLORED FOIL is featured on this completely redesigned package just introduced for Lux toilet soap. Foil is used to add

tures of \$27 million and \$18 million, respectively. And these figures, of course, do not take into account the

and filled at the necessary high speeds, is, almost without exception, the standard.

One major problem which the industry was fortunate in not having to face during the soaps-to-detergent switch-over was that of a drastic change in packaging. In their physical dimensions and packaging requirements, the two products are very similar. Thus, the large manufacturers have been able to make the necessary alterations without completely overhauling their packaging-line set-ups.

The folding carton appears to do an adequate job for powdered or granulated detergents and soaps, although few packages seem to prevent sifting completely, especially under the rough handling which these cartons get in the average store.

Another problem is that of making removal of the contents easier for the consumer. Most boxes are marked with various kinds of directions on one

of the corners, but it is questionable how many users follow instructions to the letter. As yet, metal pouring spouts have only been used on the higher-priced specialized cleansers.







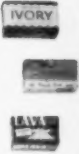

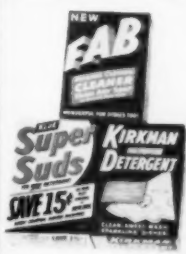












The packaging battle is not, however, being waged primarily with competing convenience features; the cost factor rules out all but the simplest of these. It is into the exterior designs of the packages themselves that the rival brands are putting their greatest efforts.

The soap section of a large supermarket today has become a kaleidoscope of bright, flashy packages of every conceivable color, each bidding for the passing customer's attention. But dominating the picture is the mass array of brand names—each gigantic in size, each hammered into potential customers' minds by millions of dollars of advertising. Obviously, the shorter a name a product bears, the bigger it can be on the package. And the

soap industry has a well-established short-name tradition that can trace its ancestry back to the first Lux package. Three-, four- and five-letter manufactured names have been carefully conceived for most of the newer products: Tide, Vel, Surf, Fab, Joy, Dreft, Glim, All, Sail, Duz, Spin, Rinso, Cheer and all the rest. Colgate-Palmolive recently made the inevitable next move: a two-letter name, "AD," for its new low-suds detergent.

Many of these packages, taken by themselves, are outstanding examples of good "hard-sell" design—Colgate's AD carton, for example, won one of the top awards at the recent Package Designers Council competition. But in the great mass displays in which they usually find themselves, the total effect can be rather overwhelming to the eye—so much forest, the trees are rather difficult to pick out. This makes it essential that each manufacturer keep close tabs on what his package

A SOAP AND DETERGENT SCORE CARD — LINE-UPS FOR THE THREE BIG PRODUCERS

	"LIGHT-DUTY" DETERGENTS	"HEAVY-DUTY" DETERGENTS	LIQUID DETERGENTS	DETERGENTS FOR AUTOMATIC WASHERS	SOAP FLAKES	GRANULATED SOAP	TOILET AND LAUNDRY BARS
PROCTER & GAMBLE							
COLGATE-PALMOLIVE							
LEVER BROS.							

COMPLETE LINES—spread over all these classifications of soaps and detergents—are now being manufactured by the Big Three companies. Some of the products illustrated above have not yet been placed in national distribution.

GLEAMING GOLD-COLORED FOIL is featured on this completely redesigned package just introduced for Lux toilet soap. Foil is used to add to package appearance, preserve soap's perfume.



looks like when it stands next to its competition.

It is also vitally important to be in constant touch with the display practices which are prevalent in the retail stores. As each day goes by, the number of new products, even entirely new lines of products, in the typical food store gets larger. And the squeeze on shelf space gets more and more intense. The amount of room which any one brand can command gets to be small indeed. The long row of carton faces, repeating over and over the name of his product, may make a pleasant sales manager's dream, but in actual practice his cartons are more than likely to end up as just one pile in a row of mountainous stacks of soap boxes, all of which somehow manage to look very much alike.

If a package has a top or a bottom or one of its sides on which the brand

names does not appear, it can very well be just this side that ends up facing customers from some crowded store shelf. To guard against this sort of thing, most well-designed soap packages today carry the name on all six surfaces.

Packages in merchandising

Soap manufacturers, as we have pointed out, have been among the very largest users of advertising media of every description. According to the figures compiled by Leading National Advertisers, Inc., Procter & Gamble alone spent more than \$44 million last year to advertise all its products in national magazines and on network radio and television—more than any other company in the country. Colgate-Palmolive and Lever Bros., not too far behind, ranked second and eighth in the list of national advertisers, with expendi-

tures of \$27 million and \$18 million, respectively. And these figures, of course, do not take into account the large sums spent on many other forms of advertising—newspapers, spot radio and television, billboards, car cards and all the rest.

These firms have for so long dominated daytime radio with dramatic serial programs that "soap opera" has become the commonly used term for this type of entertainment.

One of the reasons why such an intensive barrage is necessary may be the fact that easily recognizable differences between one brand of soap or detergent and another are quite limited. The way to promote a particular brand seems to be to hammer home its name as often as possible in as many ways as possible.

In addition, merchandising devices of every sort are getting to be increasingly popular in this field—special deals, contests, combinations, coupons, premiums. This involves innumerable packaging changes, as copy must be added to call attention to each new offer. It also involves the gluing or banding together of two or more packages for a combination deal. One of the most ingenious of recent combinations is Colgate's Fab-Ajax deal. To form this, a special paperboard holder was set up, a can of cleanser inserted and the assembly glued on top of two Fab cartons—all automatically.

Every combination is not this complicated, but they all usually require some change in the packaging line.

Almost every soap manufacturer seems to be using premiums of one sort or another. Most of them are along the familiar line of "Just send in two box tops and 50 cents . . ." But a recent survey⁴ reveals how many inside-the-package premiums have been employed. During the past year an enterprising customer could have stuck his thumb into soap or detergent cartons and pulled out such interesting plums as a dish towel, a glass tumbler, three plastic clothespins, a face cloth, a handkerchief or a paring knife. If he had wanted to cut off a soap label or box top and send along some cash, the list of interesting items he could have got is almost endless.

Some premium arrangements have actually become big business in their own right. Lever's offer of nylons⁵,

PHOTO COURTESY WHITE KING SOAP CO.



WEST COAST LINE is interesting example of use of the same basic package design for all products. The White King Soap Co., Los Angeles, recently adopted this eye-catching red, white and blue pattern.

⁴ See *Printer's Ink*, April 15, 1955, p. 100.
⁵ See "How Soap Sells Hosiery by the Millions," *MODERN PACKAGING*, Dec., 1953, p. 96.



Most spectacular, even in a field of many success stories, have been the

promoted on almost all the company's products since it began more than two years ago, has sold stockings counted in the millions and the coupons on Octagon soap wrappers, returnable for a long list of premiums, have been familiar to at least three generations of housewives and still seem to be going strong.

These and other popular merchandising devices almost always require frequent changes in package copy. It is a rare soap carton these days that

to be looking for larger sizes, not smaller ones, and envelopes of soap or detergent have never been important in the American sales picture.

New trends in detergents

As might be expected when a group of products comes into its own as rapidly as have the synthetic detergents, new developments have come quickly within that group. Although the Big Three—Procter & Gamble, Colgate-Palmolive and Lever Bros.—

uct specially designed for use in automatic dish washers.

"All" has also made news in recent months, as has been mentioned before on these pages,⁷ with its breaking of the size barrier by successfully merchandising detergent in 10- and 25-lb. cartons and giant-sized reusable pails and buckets.

This is just one indication of the growing importance of the large-sized package in this industry. Most of the popular soaps and detergents are sold

Soap makers woo customers with every packaging promotional device



PREMIUM PROMOTION on package is characteristic. Lever's offer of nylons, promoted for the last two years on almost all its packages, has sold stockings by the millions.



PRODUCT COMBINATION by Colgate-Palmolive: paperboard holder with can of Ajax inserted, two Fab cartons glued to top.



MULTIPLE-UNIT DEALS may combine three cans of cleanser (above), or several bars of soap may be overwrapped, banded or put in bag.

stays exactly the same for more than six months at a time. But, fortunately, the rate of product turnover is rapid in this industry and retailers are never faced with a backlog of obsolete packages for very long.

At periodic intervals, detergent manufacturers have gone in for extensive sampling operations and have distributed large numbers of small heat-sealed pouches of their products through the mails*. Very often, this particular job has been performed by a contract packager. Although small unit packages of detergent have been introduced by some companies for export sales, domestic customers seem

* See "Upswing in Unit Packaging," MODERN PACKAGING, Sept., 1953, p. 89.

still account for a dominant share of the industry's output, other companies have had striking results with specialized products.

One such success story is Monsanto Chemical Co.'s "All," a low-suds detergent especially designed for all types of automatic washers, in which a foaming or sudsing action may not be desirable. Noting the sales record of this product and the growing numbers of automatic washing machines (now estimated to be 20% of all washers in use and spreading rapidly), it is not surprising to see all three major producers following with their "low sudsing," "condensed suds" or "sudsless" detergents. Monsanto, not to be caught napping, is introducing a prod-

uct in three, four or more different sizes and, almost without exception, manufacturers report sales figures showing that their "giant economy" packages are steadily getting a larger share of the market.

The major companies also seem to be making a concerted effort to broaden their grip on the detergent market by offering several different brands. Each of the Big Three now has at least five kinds of detergents on sale and more are being added. Apparently they feel that when advertising expenditures reach the monumental levels they now are approaching, better returns will come from a

⁷ See "Back to the Big Economy Size," MODERN PACKAGING, Oct., 1954, p. 93.



SAMPLE ENVELOPES are frequently employed by soap companies as a part of their mass mailing campaigns, although this sort of package has not as yet proved practical for actual consumer sales.

budget that is split among several brands, rather than from a huge amount of advertising all fired at one target. Then, too, there is the always-difficult problem of getting shelf space and the strong possibility that a store will devote more room to three brands than to one. And, of course, giving birth to a new brand offers a company something new to promote.

Interestingly enough, many of the new detergents now bear names which formerly were used on soap packages. Today a consumer can buy detergents with such familiar labels as Super Suds, Rinso, Oxydol, Fels-Naptha—all once bywords in the soap field. Manufacturers feel, apparently, that the

brand loyalty built up for these products over the years will persist, even if the product itself is something entirely different.

The copy a customer reads on a detergent's label may also confuse him these days. When the field first opened up, detergents were rather sharply divided into two kinds: the "heavy-duty" variety, such as Tide and Fab, which were recommended for general laundering; and the "light-duty" products, such as Vel and Dreft, for delicate fabrics and dishes. But now it seems that no one wants to be crowded out of even a small fraction of the potential market and most of the newer detergents claim to be able to wash just about anything.

Most spectacular, even in a field of many success stories, have been the synthetic detergents in liquid form. Starting from just about nowhere six years ago, they now account for more than 5% of the detergent market, with sales last year having been more than twice those in 1952, according to the Assn. of American Soap & Glycerine Producers.

One factor in their rapid rise has been the introduction of the dripless metal can.* This appears to have been a classic example of the close meshing of consumer desires and package design, and the sales record of Lux Liquid, first detergent to use the can, has been phenomenal. After just two years on the market, this product now leads all other liquids, according to Lever Bros. As could be expected, competing canned liquid detergents have quickly appeared.

The reason for this interest in cans rather than bottles for liquid detergents is interesting. The liquid product is highly concentrated; a few teaspoonsful are enough for one dishwashing. So, for its size, the product is quite a bit more expensive than dry detergents. When sales of the liquids in glass bottles lagged, research disclosed that most housewives had a horror of dropping a bottle with their wet and slippery hands, and losing an expensive investment. Hence, one reason for the rapid acceptance of a package that eliminates any worries about its slipping and breaking, and at the same time is easier to use.

Bar soaps

In contrast to the sweeping ups and downs in the recent sales patterns of other soaps and detergents, the demand for bath and toilet bars has remained remarkably stable in the last few years. The rise of synthetic detergents, however, has cut drastically into the sales of the bar soaps designed for laundry use.

Like the soap and detergent products used for clothes and dish washing, toilet soap is bought by practically every household. Consumption for the last 15 years or so has remained steadily at between 3 and 4 lbs. per person per year.

The familiar bar of toilet soap, among the most inexpensive items, according to weight, on sale in the grocery store, has a set of packaging (This article continued on page 227)

More honors for series

For the third time in the last year, MODERN PACKAGING has received recognition for its current Industry Survey series of cover stories.

The latest honor, an Award of Distinctive Merit from the Art Directors Club of New York was announced at the club's annual Awards Luncheon at the Waldorf-Astoria, June 3. The award designated the February, 1955, cover design (reproduced herewith) and was presented to Walter Allner, the designer. It was the sole award given this year in the category of trade-magazine covers.



Out of 11,000 entries in this top-ranking national competition, covering all forms of editorial and advertising art and design, MODERN PACKAGING's cover was one of 400 selected to hang in the club's 34th Annual Exhibition, which is now open and will continue through June 30 at the Associated American Artists Galleries, 711 Fifth Ave., New York.

Later, the cover will be reproduced in the *Art Directors Annual* and will be part of the permanent exhibit which customarily tours this country and abroad under sponsorship of the State Department.

Earlier awards in connection with MODERN PACKAGING's cover series included the Certificate of Editorial Excellence for the 1954 series of cover illustrations and stories, presented by *Industrial Marketing* last month, and the Certificate of Distinctive Merit from the Art Directors Club of Philadelphia, presented last November to Donald R. Ruther, art director of MODERN PACKAGING, and George Giusti, designer, for the January, 1954, cover illustration which launched the present series.

* See "Dripless, Solderless Can," MODERN PACKAGING, July, 1953, p. 88.

Impulse for sportswear

McGregor makes a pitch for feminine shoppers by displaying a line of men's trunks and shirts in re-usable plastic tubes

Men's sportswear almost always is a good source of impulse sales for the clothing store in summer. But compressing the necessary range of colors and sizes for a single item into a compact, visible counter display is not easy.

David D. Doniger & Co., New York, maker of McGregor Sportswear and reportedly the largest firm in the field, has come up with an ingenious plastic package for swim suits and sports shirts that appears to be a neat solution to the problem. It has the obvious advantages of protection and transparency, takes up a minimum of counter space and, in addition, offers a special appeal to feminine customers, who, experience proves, buy a good share of these items for their men.

McGregor's new line of Italian-styled Piccolino knitted shirts and swim trunks has been introduced in a transparent acetate cylinder, with an attached cord on one end for convenient carrying. Many women re-use such containers to carry knitting and accessories. Size information is printed on a die-cut tab on the circular paperboard end of the container. This tab fits through a slot in the wall of the transparent cylinder, locking the end in place.

The walls of the transparent cylinders have been designed especially to show off the clothing they contain.

The new Piccolino shirts and trunks feature a pattern of narrow pencil stripes, in alternating white and color. On the front of each container is printed a black drawing of a man, left transparent where the trunks or shirt normally would appear, so that the actual garment shows through realistically, although in exaggerated scale.

Display cartons with colorful header cards are supplied so that each of the items may be sold from counter tops. An assortment of 36 pairs of trunks—offering, in two layers of 18 containers each, a complete range of colors and sizes—can thus be set up in a very limited counter area. Twelve different Piccolino shirts can be shown when their display carton is set up.

This new packaging idea, winner of First Award in the Textiles and Soft Goods classification in the recent Second Annual Competition of the Package Designers Council, is one of many that have been originated to boost impulse sales of McGregor Sportswear. Although cost of the packaging is less than 10 cents per item, the Doniger company believes that it gives the merchandise a special look that makes it unique in its field.

CREDITS: Packages designed by Mel Gussow Associates, 38 E. 50 St., New York 22, and produced by Miro Container Co., 557 DeKalb Ave., Brooklyn 5. Display carton by Salzer & Co., 636 11 Ave., New York 36.

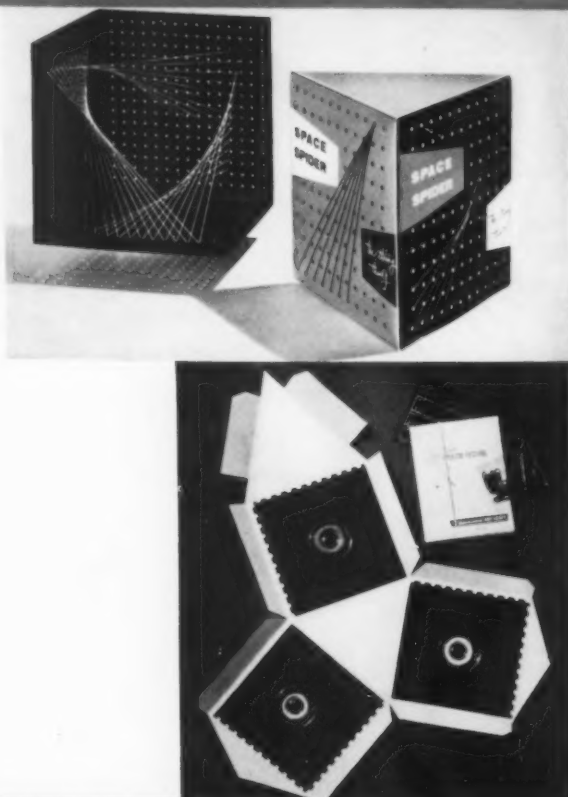


COUNTER CARTONS offer complete selection of colors and sizes of Piccolino swim trunks and shirts in minimum counter space.



TRANSPARENT CYLINDERS of acetate give customers a glimpse at rolled-up sportswear, with outline drawing of man giving amusing impression of what the garments would be like when they are worn.

Design



Geometric design dramatizes toy

An ultra-modern, wedge-shaped carton is appropriate for packaging the "Space Spider," a new three-dimensional aircraft toy distributed by Walker Products. The package suggests the design of the product itself, which consists of square Masonite sheets painted black and perforated, spools of fluorescent elastic thread, clips and a needle, with instructions for weaving the thread into imaginative contemporary designs. Wedge shape of the box cuts space requirements by 80% and weight by 40% in contrast to a cube-shaped container. The die-cut and scored container blank has three 6-in. square panels and 6-in. triangular top and bottom panels. The product's Masonite sheets fit into the square panels to give the container rigidity, thus permitting the use of light-weight boxboard without a liner. The carton is silk screened in variations of gray, black, red and white, with each panel surface having a different color scheme to accent the shape of the box.

CREDITS: Design by Walter Landor & Associates, San Francisco.
Box printed by Velvetone Co., San Francisco.

Henry Hudson's ship on paper goods



Hudson Pulp & Paper Corp.'s repackaging program, involves the company's entire line of consumer paper products. Reportedly, the packages have resulted in immediate upping of sales even before being backed by an advertising program. The redesign was prompted by a marketing and manufacturing expansion. The company, long known for its paper-napkin line, has added bacteriostatic toilet tissue, roll towels and facial-tissue handkerchiefs.

The new design is aimed to attract supermarket and grocery shoppers. It features the Henry Hudson sailing ship as an identifying trade symbol, tied in with a cosmetic-type format designed to look pleasing in the home. The regular table-napkin package has an "intermediate" variation of the completely new design carried on the other packages.

All of the cartons are manufactured at the Hudson company's own plant.

Histories

A West Coast winner

The selection committee of the 1955 Art in Oregon Advertising Show, held recently at the Portland Art Museum, chose this corrugated carton for the Dant & Russell Sale Co.'s Fir-Tex Tile as the outstanding design in the packaging classification.

The neat, simple design employs a pennant pattern—a large center pennant topped with small triple end pennants. The words "Fir-Tex Tile" are lettered in black on a green pennant on opposite sides of the carton and in light green on a black pennant on the other two sides. Remaining copy on the four panels prominently points up the easy-opening tear-tab feature of the container. Dots in light green circle the top along which the tab is to be pulled. Bold black lettering above the dots state: "To open: Grab tab and pull." Top of the package bears a paste-on paper label with the Dant & Russell trademark and a description of package contents, including size, pattern and code number.

CREDITS: Design by Arvid Orbeck, Portland, Ore. Container by Fibreboard Products, Inc., San Francisco.



Decorative labeling with molded plastics

An unusual three-dimensional effect is achieved with a new decorative label made of plastic for Charles Jacquin et Cie, Inc., Forbidden Fruit liqueurs. The label is injection molded of clear butyrate plastic in one piece and lacquered with gilt. It encircles the bottle at midpoint, with two pieces extending upward on either side to the neck, where it flares out to form a collar that circles the neck. The plastic piece is molded with a projection at one end that fits into an opening at the other end so that it easily hooks into place.

The butyrate plastic piece is sufficiently flexible to bend easily around the bottle, yet is rigid enough to adhere to the bottle contours. The label is applied in only a few seconds on the production line.

CREDITS: Plastic label molded by Wylie & Greene, Philadelphia, using Tenite butyrate plastic by Eastman Chemical Products, Inc., Kingsport, Tenn.



Multi-function merchandiser

Ever since housewares first got a foot in the supermarket door they have shown an apt willingness to look around and learn the lessons self-service food packages teach so profitably and well. As a result, housewares merchandising itself has become a good school for strategic packaging and labeling.¹

For example, there is the new Zip-Pack display shipper adopted by the Chicago Metallic Mfg. Co., Chicago, for four different assortments of its Bake-King baking pans. The multi-function versatility of this new unit is well emphasized by the fact that it is adaptable to use as an island, rack, cart or counter display. In addition, a separate floor stand of printed corrugated, pitched to hold the display carton at an angle at counter height, can be had, or a single opened container can simply be placed upon a stack of three or four unopened ones. This versatility, coupled with the carton's effortless-handling features and careful selection of top-rated sales features, makes this basically simple shipper wonderfully strategic

¹ See "Super-Selling Housewares," *MODERN PACKAGING*, Dec., 1954, p. 104.

as a marketing device in food stores.

The new display shipper has a tear tape for easy opening. Pulling the tape removes the top one-third of the carton and inside the base is a carefully selected assortment of pans.

Each shipper contains a sales-stimulating, three-color display card, which is simply slipped into the back of the carton base to form an eye-catching header piece, and a colorful paper stick-on streamer is placed

around the front and part way onto the sides of the display-carton base.

In the case of an assortment of aluminum ready-mix cake and cookie pans, which have varying prices, the header card identifies the various pans and provides space to mark prices: "pick your mix" and "today's best buy" are the selling themes.

Each pan in each assortment is individually labeled with a large-sized, full-color, appetite-appeal label—in ac-



PULLING THE TAB opens the corrugated shipper; with header card and front streamer, found inside the package, it is instantly ready to sell. Corrugated floor stand is only one of four ways to display merchandiser.



Bake-King's tear-tape shipper zips open and sets up instantly as its own counter, island, rack or cart display

cordance with today's best practice in this type of merchandise—containing all the information purchasers need regarding size, use, ready-mix capacity and price, plus recipe suggestions.

For the jobber or dealer, the great appeal of the remarkably self-sufficient shipper-merchandiser is not only the easy tear-tape opening, but the fact that no unpacking or arranging of contents is required. It can be put to work in a few seconds' time.

The Bake-King display shipper was designed on the basis of the packaging lessons the rack jobber has found so compelling, for housewares as well as other non-foods are generally placed in chain stores by rack jobbers who service the stocks at regular intervals. The needs of the rack jobber for easy-handling containers as well as for packages that spark rapid turnover are well recognized. The American Rack Merchandisers Institute featured this package in a recent bulletin.

The shipper-merchandiser eliminates the cost and trouble of a separate rack or other form of display. It obviates the handling of miscellaneous packages of promotional pieces and there is nothing that need be saved for promoting restocked items—each carton has its own sign and streamer.

Of the four Bake-King assortments now packed in Zip-Pack shippers, one is a five-style, 11-doz. assortment of cake and cookie aluminum pans; the other three are variations of 10½-doz. and 11-doz. assortments of tinware.

The aluminum pans are all ready-mix pans. That is, they are the proper size for use with the wide variety of ready-mix preparations now on the market. This makes the display carton an ideal unit for tie-in display. The carton has been found particularly sales compelling when placed adjacent to the ready-mix section of the store. Reportedly, sales have doubled or tripled when the display unit has been given this location.

The tinware assortments all are made up of pans retailing at a single price. The single price makes it easy for customers to choose a style and simplifies the check-out clerk's task.

CREDIT: Display shippers supplied by Container Corp. of America, 38 S. Dearborn St., Chicago 3.



TIE-IN POSITION near cake mixes or other bakeable foods is readily achieved by using a shopping cart as a base. Impulse sales for the baking pans become particularly high at the cake-mix section.



ISLAND DISPLAY is simply made and maintained by piling an open container atop unopened ones and working down as they sell.



COUNTER DISPLAY sells pans to bake them in along with brown 'n' serve rolls.

Suspension



PROJECTED DRAWING (center) shows how tube fits within inner cell, which is attached to carton side walls on two sides and opens with it. End-on view (lower left) shows how hexagonal shape of cell centers tube and prevents it from contacting carton walls at any point. Tube in new carton (right) is displayed by W. C. Ralston, manager of GE's Owensboro, Ky., warehouse. With tube in place, sides of the carton are slightly concave; the remaining corners carry the entire weight of the load.

The problem of packaging delicate, easily broken electronic tubes has a new solution, with astonishingly successful results.

"Carton failures have been eliminated entirely on the cartoning machine and packing production has been increased to the high speed of 10,000 per hour. Field studies have revealed complaints on defective tubes due to rough transportation handling have been reduced to practically zero and distributors, dealers and servicemen report the new carton far better than any other carton ever used."

That is how the General Electric Co. adds up the score on its new carton for small radio and TV tubes, which it describes as "what we believe to be the ultimate in an electronic tube carton." The same construction has recently been adopted by several other electronics manufacturers.

Designed for General Electric by its folding-carton supplier, the new carton is the result of several years' work. It provides maximum cushioning against shock and maximum protection against breakage by completely suspending the tube within the container, using nothing but boxboard. Due to this inner suspension,

the tube does not come in contact with the outer walls of the carton at any point; the boxboard absorbs all the shock and vibration which could cause damage to the tube or filament. The carton is machine filled at very high speeds by equipment which opens the carton, inserts the tube and code marks the end panel with tube type.

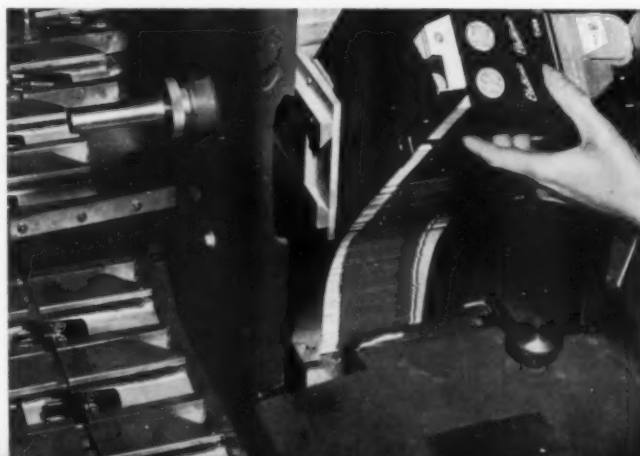
Sides of the container are slightly concave, due to the center portion of each side panel being pulled slightly

inward by the inside construction. Benefit of this is that the weight and impact within the cases is borne by the corners of the carton, which does not permit any impact or weight to be carried to the electronic tube itself.

The inner cell, hexagonal in shape, is actually adhered only to two of the side walls; it floats free of the other two walls, opposite the peaks of longitudinal score lines. The construction principle is best understood by reference to accompanying photos.

Automatic cartoning

FEED HOPPER of automatic tube-cartoning machine is loaded with folded blanks just like any other folding carton.



tube carton

Uses nothing but hexagonal inner cell

to isolate GE electronic tubes from all shock and vibration

The suspension-design carton, with its adaptable interior, also reduces the number of sizes of cartons required, thus lessening inventory problems. This is due to the form of the inner cell cut-out and creases and scores, which allows various sizes of the tubes with the same-sized base to be packed within each particular carton size. The inner cell structure also enables use of a lighter-weight board for the cartons than would normally be used for packing this type of merchandise. The result is better protection at lower cost of packaging.

Extreme care is of course of vital importance in the manufacture of the cartons to see that they are properly glued and pre-broken. Some of the cartons are quite small and would give trouble during erection on the machine if not.

The principle of floating suspension, using in some cases actual steel springs attached at all eight corners of a packing case, was applied to very large and expensive electronic tubes during the war. But its accomplishment by the integral construction of a small folding carton is quite an innovation.

In the early days of packaging radio tubes, a plain reverse-tuck carton was used. The tube was wrapped

in a midge wrapper of a sheet of cellulose wadding. The next step was a change to packaging the tube into a corrugated sleeve and an outer chip-board sleeve with top and bottom flanged platforms. The complete carton was held together with wire staples on the top and bottom. The next stage in the carton design was a two-piece carton which included an open bottom with tuck-in top flap. The inner part was a die-cut platform which folded around the tube and locked inside the outer shell by means of a dovetail device. Several versions of these cartons were used over a period of 20 years; however, none of the designs would lend themselves to automatic machine cartoning.

In 1949 a new carton was developed to be used for automatic machine cartoning. This was a one-piece carton which had a flexible inner platform panel to secure the tube inside the carton. This carton made possible a change from hand packing at 350 tubes per operator hour to machine packing at 7,500 per hour. However, it was recognized that even though this carton passed acceptance-test requirements it left much to be desired. The new carton, with its better protection, has increased machine speed by one-third.

The new suspension-carton construction was conceived and developed by the supplier with the cooperation of K. S. Omer of General Electric's staff headquarters in Schenectady, N. Y. Mr. Omer is responsible for all packaging for the General Electric Co., Electronics Division, Tube Department.

General Electric has a battery of automatic cartoning machines at its Owensboro, Ky., regional warehouse, where all cartoned tubes are processed. The cartoned tubes are shipped in standard-quality containers to regional warehouses located at strategic points throughout the United States, from whence they are shipped to GE franchised distributors.

The use of this suspension-design carton is not restricted to electronic-tube packaging, but promises to be useful for many fragile articles where corrugated inner liners can be eliminated—thus saving substantial packaging costs and permitting an easier machine pack.

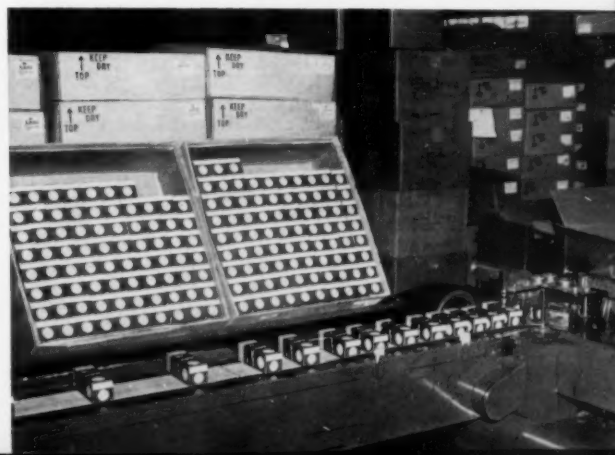
CREDITS: Suspension folding carton developed and manufactured by Bradley & Gilbert Co., 650 S. Seventh St., Louisville 1, Ky. Cartoning machine and marking attachment by Standard-Knapp, Div. of Emhart Mfg. Co., 127 Main St., Portland, Conn.

at 10,000 an hour runs without a hitch

TUBES ARE INSERTED horizontally by gentle pusher action as inner cradle (open carton, right) opens with box.



DELIVERY END of cartoner, with closed cartons passing through code-marking device (right) for printing ends.





1



2

3



4



PACKAGING

1 Propper Mfg. Co.'s new Sera-Sharp disposable blood lancets, sterile sealed in individual envelopes, come in a disposable dispensing container. The box has a double top tuck-in flap with a punched hole for hanging. Lower front section is cut away for easy removal of individual envelopes. After use, the lancet is deposited in a disposal chute in the side of the box. Box, Brooks & Porter, Inc., New York.

2 Hydro-cooled, trimmed, cellophane-wrapped heads of Watsonville cauliflower are shipped and displayed in this new printed corrugated container designed for easy trucking and rail-car loading. Wrap is cellophane with 1-in. foil strips laminated to edges and twisted closed. Container, Fibreboard Products, Inc., San Francisco. Wrap, Modern Packages, Inc., Los Angeles, using Sylvania cellophane.

3 Easy-opening tear tapes have been added to the foil-wrapped packages of National Biscuit Co.'s Nabisco Sugar Wafers. The tape is made of two pieces of cellophane laminated for additional strength. Foil wrap, Reynolds Metals Co., Louisville, Ky. Tear tape, The Dobeckmun Co., Cleveland.

4 Reportedly an advance in suture packaging by Davis & Geck, Inc., is this new sterile double-envelope Surgilope package. Outside envelope is metal foil, which protects an inner glassine envelope. In the operating room, the foil envelope is opened by the circulating nurse, who removes the inner envelope with sterile forceps, ready for quick removal of the sterile sutures by the scrub nurse.

5 The problem of shelf stacking is overcome by this new paperboard tray package with printed cellophane overwrap for two bags of TV Time Popcorn. The package is said to maintain the fresh-looking appearance of the product even in the hottest weather. Overwrap, Milprint, Inc., Milwaukee.

5



PAGEANT

6 Phoenix Candy Co. attributes recent outstanding sales increases of its English Style Toffees to these new printed cellophane packages. The bag, with large clear-viewing area, holds seven different flavors of toffee in individual wrappers bearing flavor name and an identifying color. Packages, Milprint, Inc., Milwaukee.



7 A sure stopper is the bright new foil carton for Procter & Gamble Co.'s Lilt Home Permanent. Sheet-fed gravure printing is in black and white on gold-colored foil, with a third color band to indicate type of permanent. Design, Donald Deskey Associates, New York. Carton (Gair-Reynolds Foilene), Robert Gair Co., Inc., New York.



8 Metal-end fibre cans with three-color-printed foil labels have been selected by the Simoniz Co. for a new tablet-type of car wash called Sprint. The package protects the hygroscopic tablets against moisture transmission. Container, Sefton Fibre Can Co., sub. Container Corp. of America, Chicago. Foil label, Rotogravure Packaging, Inc., Chicago.



9 Three 15-oz. cans of Whitey brand cat food come in this special introductory-offer multiple-pack carton. The paperboard carrier has a circular die-cut opening that reveals the face of a cat as it appears on the can label. Can, American Can Co., New York. Carrier, U.S. Printing & Lithograph Co., Cincinnati, Ohio.



10 The Mennen Co.'s newest product—Mennen Shampoo for Men—comes in a green polyethylene plastic bottle featuring a no-slip, finger-grip design both front and back. Raised lettering is molded in. A hole-plug opening prevents waste of product through controlled flow. Design, Design Associates, New York. Bottle, Imco Container Co., Kansas City, Mo.





FOUR-IN-ONE case contains display cartons of six pints each, ready for wholesaler to ship out and for dealer to set up for counter selling. Peyton Hoge, Brown-Forman ad manager, demonstrates set-up.

Fractionalizing the case

Brown-Forman's six-pint units solve wholesaler's split-case problem and give retailer a ready-made counter display

A possible solution to the split-case shipment problem that has long plagued the liquor industry may be found in what Brown-Forman Distillers Corp. calls its new "Pint Merchandiser Sell-Out."

Instead of the usual 24 separate pints, Brown-Forman is now packing four specially designed corrugated display cartons, each containing six pints, in its new tear-strip shipping case for 24 bottles.

There is no difficulty in splitting the case. The wholesaler merely lifts out the six-bottle cartons as he needs them to fill half-case and quarter orders. And because the six-carton is designed with a riser cover, the retailer need only open it and place it on the counter to have an effective display merchandiser.

Split shipments are normally a most important factor in supplying the retail liquor trade, since by far the greatest number of retail outlets are of the small neighborhood variety and generally are not in a position to buy in quantity.

Case shipment is much more common on fifth and quart sizes, although at least 30% of the retailers commonly buy even these sizes in split cases. The practice is far more widespread, however, for pints and half-pints because in comparison with 12 fifths or quarts, the pint and half-pint cases are designed to hold 24 and 48 units, respectively.

In handling split-case orders it has been the practice of liquor wholesalers to re-use the cases in which they receive shipments. These cases are filled

with the split-case assortments ordered by retailers and delivered by truck.

The term "split shipment" has a very literal meaning in that many distributors actually saw right through the case with a bandsaw to make up a half-case order.

To Peyton Hoge, advertising manager of Brown-Forman Distillers Corp., Louisville, Ky., this situation provided an opportunity to devise a means of packing and shipping an order offering more convenience to wholesaler and retailer, as well as an opportunity to create a display piece where none existed before. According to the company, a great deal of thought and research went into the project which, simply put, was to create a case adapted to the needs of



FLAT BLANKS before set-up shows design.



PARTITIONS are formed by flaps.



COVER folds back for display.

split shipments that would divide into four even sections and that would enable the split-shipment order to go to the outlet in a Brown-Forman package instead of just any box that came to hand.

Working with an independent package-design consultant, the company designed a set of four counter displays. The four displays in assembled form fit snugly into the standard Brown-Forman pint shipping case. For shipping purposes, these interior cases offered sufficient protection to the glass to enable elimination of partitions, bottom pad and liner.

The company reports that this economy contributed greatly to the practicality of the plan and the project was carried through to completion.

The new interior units provide a convenience in shipping and handling never before possible in the handling of a major, nationally distributed item like Old Forester bottled-in-bond bourbon whiskey. Of equal importance, the new procedure permitted the creation of a display form out of what had formerly been unused space and packaging material previously serving only for protection. In the liquor field, provision of counter-display material to the dealer has always previously been a completely separate operation.

Psychology helps to make the display effective at the point of sale, says Brown-Forman, because the handling task is so much easier for the retailer. Instead of having to unpack the bottles, dispose of the wholesaler's temporary packaging and set up a separate counter display, all the retailer has to do is to put the "Sell-Out" on the counter. And it may be taken for granted that pints sell better when conveniently placed on the counter rather than joining the rows

of other merchandise on the dealer's shelves.

The saving of time and work at the point of sale is one aspect of an operation which is featured by economy throughout.

For example, in purchase and shipment of a display through customary procedures, a considerable proportion of total expenditure is required for the cost, handling and shipment of the corrugated folders in which the displays are shipped. In the use of the self-contained, display-shipping cartons these costs are practically eliminated.

The speed and ease of handling by this new form of shipment is facilitated by the fact that the shipping units arrive already assembled at the Brown-Forman bottling plant. Their use requires practically no additional labor on the bottling line.

Finally, the creation of this new type of double-purpose display brings much-needed assistance to wholesalers, who in recent years have seen an increasingly greater proportion of their total costs going to the operation of their split-goods business.

The new Pint Merchandiser Sell-Outs are being used in conjunction with the relatively new tear-strip case, an innovation in itself in the liquor field. Brown-Forman reports that it was one of the first in the distilling field to adopt the zip case to general use for regular shipments.

CREDITS: Display construction engineered by Richard E. Paige, Inc., 114 E. 32 St., New York 16. Display cartons supplied by Owens-Illinois Glass Co., Toledo 1, Ohio.

DISPLAY CONVENIENCE is demonstrated by Jerry Rosenberg, Louisville, Ky., retailer.



WHOLESALE can cut cost of handling less-than-case orders. Six-pint packs are merely lifted from case for reshipping.



Prize-winning set-up boxes

First award winners in 23



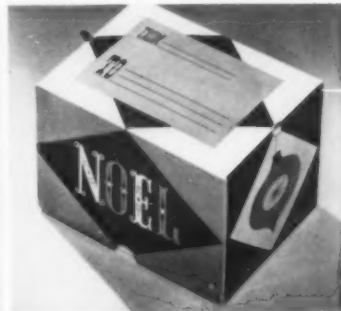
Confections



Beverages



Food



Mailing Boxes



Holiday Boxes



Hosiery & Apparel



Personal Accessories



Miscellaneous Boxes



Jewelry & Silverware



Photographic Products



Textiles



Soap



Retail Boxes



Cosmetics



Stationery

MODERN PACKAGING

'Hard sell' is keynote of 81 winners picked in Paper Box Manufacturers' fifth annual competition

end-use product groups



Drugs & Chemicals



Footwear



Hardware



Office Supplies



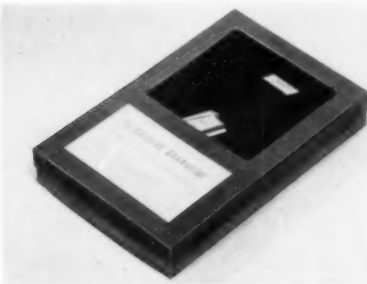
Sporting Goods



Tobacco & Smoker's Supplies



Toys & Games



Wearing Apparel

Selected from some 2,000 entries submitted by members of the National Paper Box Mfrs. Assn., 27 outstanding set-up boxes were picked for first awards by the judges of the association's Fifth Annual Packaging Competition in which a total of 81 boxes received citations.

Winning boxes, which were on display at the NPBMA's annual convention at Atlantic City on June 2 to 5, were chosen on the basis of superiority of end use, design and construction features.

This year's best packages, according to the judges, reflected a greater emphasis than ever on "hard-selling" designs, fewer of the winners than usual being picked chiefly because of their outstanding surface-design treatment.

Other trends praised by the competition's judges were the growing use of multiple-sales-unit packages and family designs, and improvements in such sales helps as brand identification, package inserts and contents listings.

The eight packaging and merchandising experts who picked this year's prize winners were: E. H. Balkema, general purchasing agent, Colgate-Palmolive Co., Jersey City, N. J.; A. P. Bondurant, vice president and advertising director, Glenmore Distilleries, Louisville, Ky.; Robert S. Dunlop (retired), former managing director, Dominion Paper Box, Ltd., Toronto, Ont.; Milton L. Fitch, president, Howard-Wesson Advertising, Worcester, Mass.; Walter M. Hilliard (retired), Dennison Mfg. Co., Marlboro, Mass.; Mrs. Virginia McCone, director of retail merchandising, *Ladies' Home Journal*; W. V. Morphy, manager, Supplies Department, R. H. Macy & Co., New York; Kenner S. Omer, warehouse and packaging specialist, Electronics Department, General Electric Co., Schenectady, N. Y.

First awards were given to boxes designed for 23 different product categories, based on general superiority of end use. Top honors also went to the best boxes in four general classifications, surface design and execution, superiority of construction, display boxes and transparent boxes. For

most of these 27 groups, second awards and honorable mentions were also chosen.

General Superiority of End Use:

Beverages—First Award: F. N. Burt Co., Inc., for whiskey gift box for Glenmore Distilleries. A presentation box, typically masculine throughout, from gold printing on leather brown cover pages to bright red velour paper inside; hinged side opening makes it into a display package. Second Award: F. J. Schleicher Paper Box Co., for Old Fitzgerald box for Stitzel-Weller Distillery. Honorable Mention: The Bradley & Gilbert Co., Inc., for Old Forester Decanter Box for Brown-Forman Distillers Corp.

Confections—First Award: Vincent Box Co., for Special Selection candy box for Walter Baker Co. A special package for promotion of milk chocolates, holding six bars; wrap printed in brown and black on white background gives attractive, "clean" design. Second Award: G. A. Bisler, for Whitman's Selection candy box for Stephen A. Whitman. Honorable Mentions: Jacksonville-Ginter Box Co., for Candy Cotton Bale box for Stuckey's, Inc., and W. H. Albrecht Co., for "Candy by the Yard" box for Price Candy Co.

Cosmetics—First Award: Oscar Trilsch Co., for toiletries gift boxes for Mary Chess, Inc. A set of boxes using deep-embossed gold paper, satin lining tucked around die-cut platforms, satin-covered padded inserts with gold-stamped printing, satin lid supports and angular display of merchandise to give regal dignity and an air of refinement. Second Award: George H. Snyder, Inc., for powder and cologne boxes for Helena Rubinstein, Inc. Honorable Mention: Niagara Box Co., for Mennen baby gift set for the Mennen Co.

Drugs, Chemicals & Pharmaceuticals—First Award: Walter P. Miller Co., Inc., for Privine drug box for Ciba Pharmaceutical Products, Inc. (also won Second Award for Superiority of Construction). An attention-getting box wrapped in red, blue and black with a dignified, "engineered" look; intricate die-cut platform keeps contents directly under acetate windows. Second Award: Walter P. Miller Co., for Ciba pharmaceutical specialties box for Ciba Pharmaceutical Products, Inc. Honorable Mention: Kiernan-Hughes Co., for Coricidin drug box for Schering Corp.

Food—First Award: Congress Paper Box Co., for jellies gift box for Reese Finer Foods Co. An eye-catching cover, with interior platform in two colors that holds six jars of jelly. Second Award: Congress Paper Box Co., Inc., for Cocktail Cheese box for Sue Ann Food Products Co. No Honorable Mention.

Footwear—First Award: Frank C. Meyer Co., Inc., for shoe box for I. Miller Shoe Co. Photographic technique used to decorate box and to tie in with national advertising campaign; printed in tones of gray with sparse use of pink for lettering; inside of box also pink. Second Award: Frank C. Meyer Co., for Coccini shoe box for Coccini. Honorable Mention: Paris Paper Box Co., for moccasins box for Busken's.

Hardware—First Award: Grigsby Bros. Paper Box Mfrs. for Ebon-Ware barbecue accessories boxes for Dor File Mfg. Co. A set of boxes covered in tan leatherette; interior has leatherette paper and green base, printed in black to show off tools to best advantage. Second Award: Dennison Mfg. Co., for Craftsman barbecue boxes for Imperial Knife Co. Honorable Mention: Paper Package Co., for thermometer box for Chaney Mfg. Co., Inc.

Holiday Boxes—First Award: Wayne Paper Box & Printing Corp., for holiday boxes for Wurzburg Co. Various sizes of boxes having dark green base with angel design on lid in "little girl" colors to give Christmas feeling. No Second Award or Honorable Mention.

Hosiery & Wearing Apparel Accessories—First Award: Cherokee Paper Box Co., Inc., for men's hosiery display box for Wisteria Hosiery Mill, Inc. (also won Second Award for Best Display Box). A simple, effective box that protects merchandise, yet permits maximum visibility; glossy black box wrap is designed to contrast with

bright colors of socks. Second Award: Van Ness Bros., Inc., for men's handkerchief box for William T. Bryan & Co. Honorable Mentions: Tobin-Howe Paper Box Co., for Longfellow handkerchief box for Crown Handkerchief Co. and George W. Plumly Co., Inc., for accessories display box for S. Rudorfer's Sons Co.

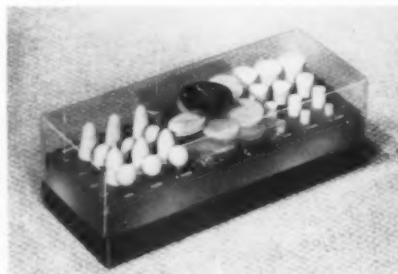
Jewelry & Silverware—First Award: The Box Shop, Inc., for Jolly Jack silverware box for International Silverware. An attractively printed hinged-lid box containing a "jumping jack" holding two pieces of baby silver. Second Award: Dennison Mfg. Co., Marlboro, Mass., for Schiaparelli watch-band box for Jacques Kreisler. No Honorable Mention.

Mailing Boxes—First Award: Pollock Paper Corp., for Noel mailing box for Neiman-Marcus Co. Box designed to hold a ceramic bell so that it can be easily inserted and well protected; design carries out Christmas gift motif. Second Award: Walter P. Miller Co., Inc., for Ciba drug mailer for Ciba Pharmaceutical Products, Inc. Honorable Mention: Kiernan-Hughes Co., for mailer for Burroughs Wellcome & Co.

Miscellaneous Boxes—First Award: Stecker Paper Box Co., for automotive promotional-materials box for Chevrolet Div., General Motors Corp. A sturdy, shoulder-type file box designed to hold all promotional and technical data on 1955 Chevrolet prior to public announcement; design uses "teaser" device to get recipient to open it. Second Award: Paris Paper Box Co., for movie titles box for Stanley Plastic Products Co. Honorable Mention: Henry Schmidt & Bro., for Plexiglas selector box for Rohm & Haas Co.

Office Equipment & Supplies—First Award: Bradley & Gilbert Co., Inc., for pencil box for Mallard Pencil Co. A sturdy outer box with "clean" design gives quick identification of con-

First-prize winners



Best Transparent Box



Superiority of Construction

MODERN PACKAGING

tents, holds six smaller boxes with similar design and thumb-cut for convenience. Second Award: Van Ness Bros., Inc., for carbon-paper box for Burroughs Adding Machine Co. No Honorable Mention.

Personal Accessories—First Award: Dennison Mfg. Co., Marlboro, Mass., for Flame eyeglass rim box for American Optical Co. Unusual cover paper has rich applique; nail-hinged cover and special interior display platform used to give effect of elegance and quality. Second Award: Earlville Paper Box Co., Inc., for baby's brush-set box for Mohawk Brush Co. Honorable Mentions: Dennison Mfg. Co., Marlboro, Mass., for men's jewelry box for Hickok and wallet box for Amity Leather Co.

Photographic Products & Supplies—First Award: Congress Paper Co., Inc., for Wollensak movie camera box for Revere Camera Co. Box is strong enough for an expensive camera, yet suitable as a display unit; ingenious layout of cover design is used to give pertinent facts about contents. Second Award: F. M. Howell & Co. for camera box for Ansco Div., General Aniline & Film Corp. No Honorable Mention.

Retail Boxes—First Award: Wayne Paper Box & Printing Corp., for department-store gift box for Hein's (also won Honorable Mention for Best Surface Design and Execution). Set of boxes uses bright, clean design on white flint lids; light-blue flint paper for bases accentuates lid design and increases feminine appeal of the packages. Second Award: Pacific Paper Box Co., for retail boxes for Gifts for Men. Honorable Mention: Pacific Paper Box Co., for retail box for Robert, Ltd.

Soap—First Award: Pohlig Bros., Inc., Richmond, Va., for Pot Pourri soap box for Claire Burke. A high-impulse package appealing to women,

with antique-finish paper and green blend ink suggesting the spicy scents of the contents. No Second Award or Honorable Mention.

Sporting Goods—First Award: I. A. DeLine Paper Boxes, Inc., for fishing-fly kit box for Hank Roberts, Inc. Window box shows off attractive instruction book and flies inside, helping suggest use of set as a gift. Second Award: Mutual Paper Box Corp., for clock hobby box for Lanshire Clock Co. Honorable Mention: Dennison Mfg. Co., Marlboro, Mass., for sporting-goods sample box for U. S. Rubber Co.

Stationery—First Award: Congress Paper Box Co., Inc., for French Papier stationery boxes for Arthur E. Wilson Co. Set of full-telescope boxes decorated with pen-outlined Parisian street scenes in four different combinations of pastel shades to give special atmosphere. Second Award: Congress Paper Box Co., for Christmas gift box for Lakeside Central Co. No Honorable Mention.

Textiles—Old Dominion Box Co., for gift towel box for Cannon Mills. Unusual oval-shaped box has blue-green background color and gold and white design, which is also printed on acetate lid. Second Award: Old Dominion Box Co. for another gift towel box for Cannon Mills (also won Honorable Mention for Best Surface Design and Execution). Honorable Mentions: Specialty Paper Box Co., for baby blanket box for Weil Mfg. Co. and Newark Paper Box Co., for sheet-and-pillow-case set box for Bates Fabrics, Inc.

Tobacco & Smoker's Supplies—First Award: Mutual Paper Box Corp., for cigarette dispenser box for John Monte Monroe Cigar Co. Slotted box has three lid sections, each fitting snugly over partitioned division of the box; lids are padded and wrapped in simulated brown leather paper matching

the grain covering the base. No Second Award or Honorable Mention.

Toys & Games—First Award: G. A. Bisler, Inc., for Planetarium box for Harmonic Reed Corp. A well-constructed shoulder box designed to protect, display and sell a high-priced scientific toy; design gives graphic picture of toy's purpose. Second Award: San Diego Paper Box Co., for model airplane box for Cox Mfg. Co. Honorable Mentions: Congress Paper Box Co., Inc., for Educational Card boxes for Ideal School Supply Co. and Bradley & Gilbert Co., Inc., for plastic building-blocks for Kusan, Inc.

Wearing Apparel—First Award: Van Ness Bros., Inc., for Ultrasuede shirt box for The Manhattan Shirt Co. Cleanly designed window box showing contents, with description below window giving quick description. Second Award: Empire Carton Co., for Lily Dache blouse box for Free-land Shirt Co. Honorable Mention: Avalon Paper Box Co., for Day-of-the-Week Panties box for California Lingerie, Inc.

Best Surface Design and Execution:

First Award: F. N. Burt Co., for Old Spice powder box for Shulton, Inc. A box that catches attention by combining neat, precise, Pennsylvania Dutch art style with fashionable modern colors—charcoal gray and chalk blue backgrounds set off the design printed in gold, white, amber and sienna; inside drum tops are covered with parchment to minimize odor loss. Second Award: Congress Paper Box Co., Inc., for confectionery box for Heinemann's Bakeries. Honorable Mentions: Congress Paper Box Co., Inc., for Christmas Sweets box for Heinemann's Bakeries; Wayne Paper Box & Printing Corp. (see under *Retail Boxes* above) and Old Dominion Box Co. (see under *Textiles* above).

Superiority of Construction:

First Award: Paper Package Co., for graphic meter ink box for The Esterline-Angus Co., Inc. Unusual packaging to overcome awkward shapes of bottle, bulbs and spare pens; a tall drum insert is printed, scored, die cut, formed and stripped, then fitted into a shallow base; lid telescopes over insert and is printed with complete instructions. Second Award: Walter P. Miller Co., Inc. (see under *Drugs, Chemicals & Pharmaceuticals* above). Honorable Men-
(This article continued on page 226)

for special features



Best Surface Design & Execution



Best Display Box



Ambassador with portfolio

Merchandising is given a diplomatic theme with Continental Distilling Corp.'s new point-of-sale display for its Embassy Club three-bottle Dispatch Case (see MODERN PACKAGING, May, 1955, p. 104). The "Embassy Club ambassador" highlights this die-cut and eight-color lithographed display unit for counter and window use. The figure is depicted in an airport scene familiarized by television and newsreel shots of debarking diplomats. Prominent is the Embassy Club Dispatch Case which the "ambassador" is holding in his right hand. Copy on the call board states: "Just Arrived, Embassy Club Dispatch Case Handy 3 Bottle Carrier . . . World's Most Gentle Tasting Whisky." The unit measures 18 in. in height and is designed for use in conjunction with a display of actual Dispatch Cases near the cash register or some other prominent impulse-sale point within the liquor store. The company reports that the display has been pre-tested as a consumer stopper that will initiate extra sales.

CREDIT: Display by Ketterlinus Lithographic Mfg. Co., Philadelphia.

DISPLAY



Sharpened techniques for drugs

Parke-Davis & Co.'s new counter display and redesigned packages for Medicated Throat Discs are aimed at capturing immediate attention of hurried self-selection shoppers. A comparison of old and new points up the effectiveness of today's sharpened display packaging techniques. The back riser of the unit features a cartoon drawing that implies the "quick relief" claimed for the product. Redesigned individual packages have a horizontally split color combination of blue and white. The upper portion is white, with "Throat Disc" lettered in blue. The Parke-Davis logo-type in red is given less prominence than the word "medicated," also in red. A tear-strip cellophane overwrap completes the package.

Both the display carton and the individual packages, which are made at the Parke-Davis plant, prominently state: "Sixty Discs—23¢."

CREDITS: Design by Lippincott & Margulies, Inc., New York. Tear strips by The Dobeckmun Co., Cleveland, Ohio. Cellophane by E. I. du Pont de Nemours & Co., Wilmington 98, Del.

Vacuum-formed counter dispenser

Fishing floats in seven different sizes are displayed compactly for easy selection in this vacuum-formed plastic counter merchandiser. The unit features gravity feed. As items are withdrawn by the customer, they are automatically replaced. The merchandise is quickly and easily loaded into the upper section of the housing from the rear. This inexpensive display, compact in size and light in weight, is vacuum formed from modified polystyrene sheet measuring 0.080 in. The extruded sheet has a high-gloss finish, high rigidity and strength. The unit is vacuum formed into two compartments, the housing and the grooved tray. The housing is a brilliant green. A decal of red and white is applied to the upper area of the housing. Clear acetate sheet covers the display compartment to protect the floats. Front panel is printed to identify the size of float in each of the seven rows.

CREDITS: Display vacuum formed by Vac-Form, Inc., Dayton 6, Ohio, using Campco GM modified polystyrene supplied by Campco Div., Chicago Molded Products Corp., Chicago, and acetate sheet by Eastman Kodak Co., Rochester, N. Y.



GALLERY

Floor stand is huge package replica

A floor stand for The Savogran Co.'s Strypeeze semi-paste paint remover, creates the illusion of a giant open can of the product.

This point-of-sale display was designed not only to increase sales of Strypeeze, but also to encourage shoppers to purchase related items such as sandpaper, putty knives, paint brushes and steel wool. This aim has been achieved, the company reports, since sales of Strypeeze as well as related items have increased considerably since its introduction. The unit, of one-piece construction, is of corrugated, printed in orange and blue. Its sturdy construction enables it to hold up to 100 lbs. of merchandise. Top of the unit is recessed to hold the two different sizes of cans without obstructing copy on the riser.

A rectangular-shaped color patch on the front tells the shopper: "You'll need sandpaper . . . putty knives . . . brushes . . . steel wool" when refinishing with Strypeeze.

CREDIT: Display by Raymond C. Adams, Boston.



Dramatizing the sample

Showmanship of a very special kind is demanded for one class of packages that the consuming public never sees—the samples that ethical drug firms send to the country's 170,000 physicians.

The only way these drugs can be sold is through a doctor's prescription. And one of the best ways to get him to prescribe them is to offer samples that will arouse his interest and lead him to evaluate their effectiveness with his patients.

The technique of attracting his attention becomes more and more a matter of skillful strategy in this day when it is estimated that the average physician receives more than 3,000 mailings of samples a year—about 10 a day. A clever package helps a particular sample to stand out from the crowd. But it can't be so clever or so cute as to lose lose dignity with this highly professional group. It can be humorous—but the humor must be in good taste. The package can be dramatic—but it must inspire confidence.

No money is spared by the drug firms in the preparation of smart copy appeals, special artwork, quality paper stocks, color printing and unusual constructions to achieve the desired degree of attractiveness.

A group of sample packages distributed by Sharp & Dohme, Philadelphia, significantly illustrates the very imaginative thinking that must go into such packaging, which is reaching immense proportions in the drug business today. The packages were designed by Andrew Schmith, the company's art director.

Three of the Sharp & Dohme packages are constructed like stiff-covered miniature books with amusing titles, illustrations and color treatments that immediately arouse interest. Two deal with products suggested for patients who must watch their weight and the third contains a sample of a product recommended for hypersensitive patients. Inside the book folders, die-cut frames hold the regular catch-book type of unit-packed samples which, alone, would have no drama. A folder humorously suggests the use of the product. One of the book covers, for example, pictures a plump girl at a table shoveling in food. The caption

MODERN PACKAGING



BOOK FOLDERS with amusing illustrations, humorous copy and colorful printing direct attention to product for patients who must watch their weight. Same style of sampler, titled "Dance of the Capillaries," is used for another product recommended for reducing blood pressure.

IMAGINATIVE DRAWINGS subtly suggest product uses on these decorative boxes, which have no exterior trade identification. Fat-girl-in-scale illustration is used for sample of a weight-control product. Tape-measure-with-eyes suggests use of a product for treating roundworm, tapeworm, etc. Pienickers illustrated against a woodsy green background suggest poison-ivy extract. Platform in background shows how standard professional sample may be enclosed in a dramatized presentation package.



Clever strategies essential to attract physician's attention demand a highly specialized type of package showmanship

reads, "Some people need help to . . . (with the rest of the line continuing on the inside folder) . . . "the best exercise for reducing." The folder completes the thought: "The best exercise for reducing is a rapid movement of the head from right to left when the mashed potatoes and gravy are passed." The copy continues, "But most patients need help to shake their heads . . . By depressing the appetite, Altopose Tablets enable your overweight patients to lose weight comfortably." Another book cover for the same product features an illustration of a man eating a fine dinner with the copy idea: "For the patient who hasn't enough strength to push himself away from the table. . ."

A sample of Stolic Forte, a drug product for hyper-sensitive patients, is packaged in the same kind of book cover with an attention-getting drawing, symbolic of the caption, "Dance of the Capillaries."

A group of unusual-shaped boxes has been designed for several other samples, as dramatic presentations for the standard type of professional samples they enclose. Two of these, made with sloping sides, have folding construction for bases and rigid construction for the hinged covers. One of the packages contains a remedy for roundworm, tapeworm and other parasites. It suggests product usage with very amusing stylized illustrations of the worms—one depicted as a tape measure with eyes! A poison-ivy-extract sample is put in one of these sloping-sided boxes on which is a cartoon-type drawing of a family on a picnic.

An interesting square folding box, printed in gray and coral, carries an illustration of an overweight girl sitting in a hanging scale. It shows how even a very personal subject, such as overweight, can be handled with lightness if the artwork is delicately handled and pleasing. The illustration also ties in with the new word, "appestat," a term signifying control of body weight by proper regulation of appetite.

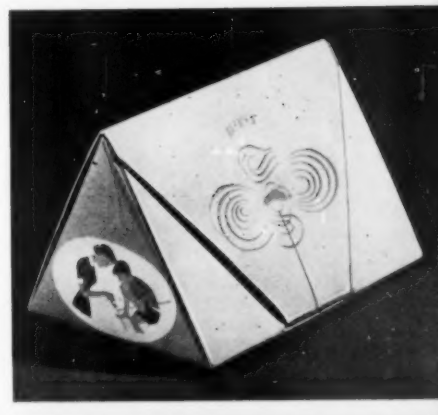
A very ingenious triangular-shaped folding box is used as a mailer for B.F.I., an antiseptic first-aid dressing and surgical powder. Wash-drawing color illustrations, suggesting uses,

have more the feeling of quality magazine spots than the usual advertising artwork. The one-piece carton has an unusual flap construction and on the base of the triangular carton is a place for the mailing label.

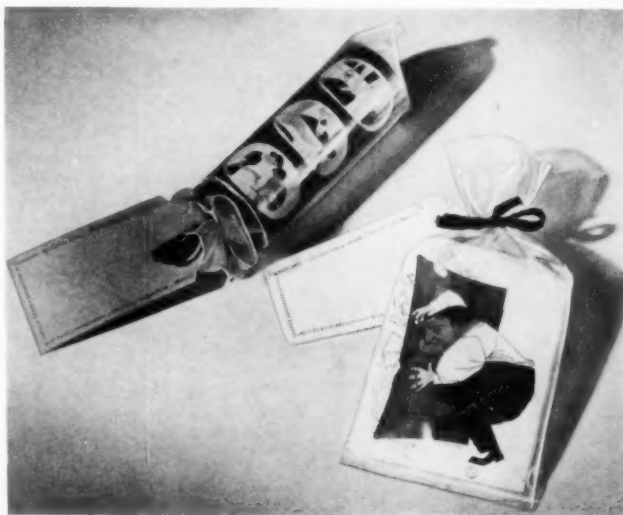
Apparently, it is good practice to change the sample package for the same product occasionally. A can of the B.F.I. powder has also been sent to doctors in an attractively printed sleeve illustrating uses and enclosed in a polyethylene bag, tape tied with a card on which may appear salesman's name or other message.

A polyethylene bag also makes an attractive enclosure for a sample of unit-packed "Stolic Forte" tablets for high blood pressure. The standard sampler is dramatized by a color-printed folder carrying a humorous picture of a man—red in the face—trying to close the door of an overfull closet. The picture shows through the polyethylene bag. There is no copy. The package must be opened to find out what kind of product it contains.

CREDITS: Book cover folders and boxes for Altopose and B.F.I. powder by George Sparks, 4111 Pechin St., Philadelphia. Boxes for Crystoids and poison-ivy extract by C. Albert Sauter Co., Inc., Water & Jackson Sts., Philadelphia.

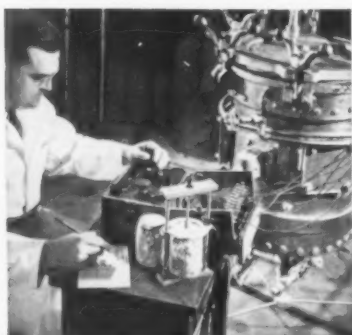


TRIANGULAR MAILER of folding construction provides a pleasing and intriguing setting for a can of antiseptic powder.



POLYETHYLENE BAGS are used to give visibility to these attractive sleeves and humorous folders, covering standard-packaged samples, which by themselves would have little appeal.

OWENS-ILLINOIS ASSURES YOU A



Co-ordinated Research

Pure research into formulae and fabrication of glass, *packaging research* into processing and handling methods in customer plants, and *market research* into consumer attitudes, add up to greater specific value for your packaging dollar.



Engineered Design

The package that takes your product to market must take *three* needs into account. Considerations of its function in the retail store, its operating efficiency and its consumer utility all become a part of the prescription for an Owens-Illinois package.



The Right Container

Versatility of facilities enables Owens-Illinois to supply containers for specialized needs: Duraglas containers for almost any item; Libbey Safedge packing tumblers or premiums; Kimble Ampuls and Vials, and a variety of Owens-Illinois plastic containers.

The right container



COMPLETE PACKAGING APPROACH



The Right Closure

Know-how as to the best available liner and closure—best for packing, displaying, or using a specific product—may well be one of the most important single points through which expert packaging counsel will reward you many times over.



Needed Fitments

With emphasis on the word "needed," Owens-Illinois fitment specialists are keenly aware of sales benefits possible through use of fitments which are not "gadgets" but which basically increase consumer satisfaction with your product.



Modern Cartons

Modern cartons are developed only through systematic consideration of their opportunity to serve you in the retail store and retail warehouse as well as on your own filling line and in transit. Owens-Illinois is pioneering such developments.

from experience...



*because we've
learned a lot from
making 100 billion
containers*

THE ACCUMULATED EXPERIENCE of making that vast volume of glass containers is the broad and deep foundation of knowledge that works daily for every customer of Owens-Illinois.

In today's highly competitive market, the product that holds a *package advantage* is often the

one most likely to succeed. That's why you see more and more "practical packages"... not only attractive to start with, but packages that protect the high quality of the product and make it *easy to use* throughout its life.

At Owens-Illinois, all necessary ingredients of *salespackaging* are

co-ordinated to secure the sales impact you need. Look to Owens-Illinois as a market-minded supplier for cartons with built-in point-of-sale value, quality closures in plastic and metal, fitments that meet your dispensing need, glass containers of all types and capacities.

DURAGLAS CONTAINERS
AN **Ⓢ** PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES • TOLEDO 1, OHIO

Industrial family

Two lines of Airtex automotive parts are pulled together with identical principles but distinctly different design themes

Proof that family package design treatment can be applied as effectively to industrial products as to foods, drugs and other consumer items may be found in the extensive redesign program recently launched by the Airtex Automotive Div. of Airtex Products, Inc., Fairfield, Ill., one of the nation's principal suppliers of original and replacement automotive parts.

Despite the variety of motor-car components manufactured by this organization, ranging from fuel pumps and water pumps to tie rod ends and hydraulic brake parts, this comprehensive step has resulted in greatly improved display impact and company identity for all Airtex parts,

which are distributed to the trade through jobbers and wholesalers.

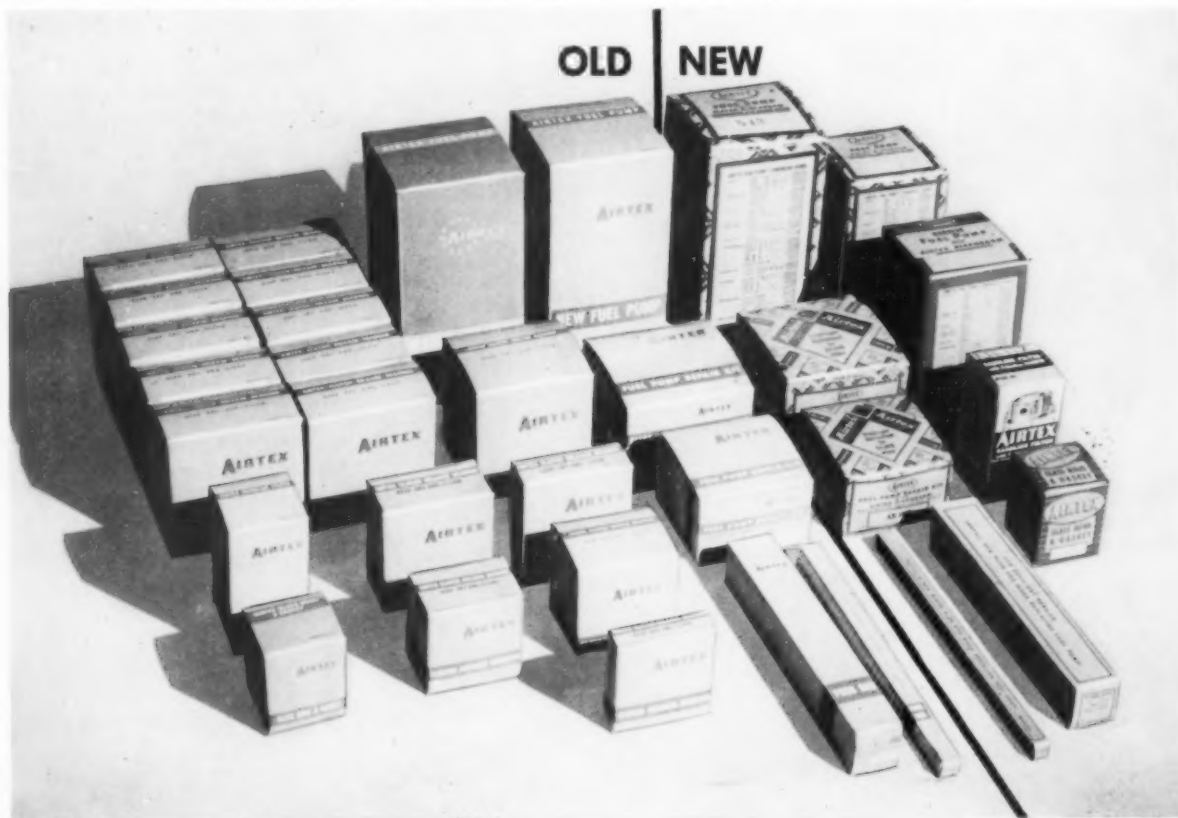
Closely allied with the Airtex package redesign is a similar activity by the Master Parts Div. of the same parent organization. Master's parallel line of automotive parts reaches a different competitive market. In working out the combined program, it was imperative to maintain complete identity for each line; yet a number of the basic principles and techniques involved apply to both groups of packages, as indicated in the accompanying photographs.

Coincident with adoption of the new package designs, Airtex has changed over from tuck-end style to

glue-sealed-end cartons. This switch has been made possible through installation of a new adjustable carton-sealing machine which greatly expedites this organization's large-scale packaging activities.

Prior to consolidation of design, the Airtex packages presented a somewhat bewildering array of designs and color combinations. Some of the boxes incorporated a symbolic line drawing illustrating the part contained, while others did not. There was no unifying trademark to weld the unrelated family of packages together and create a "united front"—no strong identifying characteristics indicating the common origin of the products.

NEW AND OLD groupings of typical Airtex Division parts show the striking clean-up and modernization which have been achieved with the new family package design. Glue-sealed cartons have now replaced the tuck-end type.



The first step in clarifying this situation came when an industrial-design organization was retained to create a new trademark for the Airtex line. As ultimately developed, this consisted of the word "Airtex" in sans-serif, upper-case letters, with the "A" extending both above and below the others. For increased identity, insuring immediate recognition of the trademark regardless of the position in which it is seen, the first three letters of the word are enclosed within a ring composed of 12 small spheres, symbolizing a ball-bearing retainer ring and thus logically related to the parts made by Airtex. Company officials were so well pleased with the new trademark that they ordered its adoption as the basic element of a completely new package design.

The fundamental color combination of the new Airtex packages is orange and blue. As contrasted to the earlier unrelated packages, the new design is marked by simplicity. All extraneous details which might clutter up the packages, obscure trademark recognition or create confusion in the mind of the buyer have been eliminated. The orange background effectively sets off an encircling blue band against which the specific identity of the item is printed in reverse white capital letters on both the front and back panels of the carton. Company and part name also appear on both end flaps of the package. Additional printing on the front flap includes the trademark, in reduced size, and a white unprinted rectangular panel for imprinting a part identification number, which aids in selecting the correct part when the packages are stacked on distributors' shelves. Reference to printed lists supplied to the trade indicates the makes and model years on which the parts may be used.

In deciding to eliminate the parts illustrations used on many of the previous packages, the design organization took the view that these line drawings were symbolic only, did not include sufficient detail to show specialized construction features and made no positive contribution to the appearance or sales effectiveness of the packages. Since one manufacturer's fuel pump looks pretty much like another's, it was felt that the drawings should be shelved in favor of a stronger family design identity throughout the line. The elimination from certain packages of detailed



MASTER LINE shows striking contrast between old and new designs. Stripe motif and different trademark set this line apart from Airtex.

specification lists showing makes and models on which parts could be used was considered desirable because such lists seriously "dated" the packages each time new models were introduced and resulted in unnecessary carton obsolescence. This information now is supplied on printed slips placed within the package and is, of course, available on parts catalog lists supplied to Airtex distributors.

Since the line includes both new and rebuilt fuel pumps, it was necessary to incorporate both types of packages in the family design treatment while insuring that the two products would not be inadvertently interchanged at the sales outlets. This problem was effectively eliminated by simply reversing the two basic colors and modifying the labeling on the one package to show that it contains a rebuilt rather than a new fuel pump. The solid blue background makes it an easy matter to spot this package in group displays or stock shelves. Although formerly some of the heavy dual fuel pumps were packed in plain corrugated, they are now being supplied in corrugated boxes carrying the new surface design and color combination. These containers not only provide greatly improved protection for pumps in these sizes, but may also be rapidly closed and glue sealed on the same new equipment now used for the kraft cartons.

Printed labels for other Airtex products packed in corrugated containers have also been modified to conform with the new package design treatment, as have shipping labels,



PROBLEM of distinguishing new and rebuilt parts was solved by reversing color schemes—orange background for new, blue for rebuilt. New trademark features circle of spheres symbolizing ball-bearing retainer ring.



CARRY-OVER of same design scheme to box and shipping labels maintains brand identity. White rectangle allows for imprinting of part identification.

sales display materials, letterheads and all other printed matter used by the division.

The labels, which now match the background hue of the new boxes, carry the Airtex trademark at the top and the product identification in white caps against a blue band. A rectangular blank in the lower right corner of the label permits imprinting for parts code identification. At present, labels are applied by hand on the packaging lines, but the company is considering the installation of automatic labeling equipment as a further refinement of its stepped-up packaging program.

On the Master parts line, the goal of family identity has been effectively achieved with another distinctive de-

sign approach. Here again, the previous line of packages presented much the same problem; although a Master brand trademark having an oval background was used on a number of packages, they lacked design uniformity. Many were cluttered with parts illustrations, sales information and other details which made orderly and coordinated display impossible. On the new packages, unmistakable family identity has been obtained through combination of a dark blue background with two or more narrow yellow stripes encircling the packages in the smaller dimension, setting off a large initial letter "M" and the word "Master" as the focal point of visual interest. The number of stripes used depends upon the size and proportions of the individual packages, but width of stripes never varies.

Whereas on the previous Master packages the identity of the part was printed directly on the carton, along with the rest of the surface design, all of the new packages merely carry the general term, "Master Service Parts," with specific parts description imprinted separately on the end flap or side panel. Through this change, the Master Parts Division has been able to effect an important consolidation of box sizes, greatly simplifying the package inventory problem, with a saving of thousands of dollars, as well as enhancing the display impact of the line. Here, also, the new design has been carried over to shipping labels, letterheads, envelopes for

small parts and all other printed material.

In addition to the Airtex and Master lines of automotive parts, a large volume of private-brand automotive components is produced by Master Parts Division. Insofar as possible, the various packages being used for these private brand accounts are being integrated and standardized in the interest of increased packaging efficiency.

From the operating standpoint, the most important new phase of the Airtex packaging program consists of the change-over from tuck-end to glue-sealed cartons, made possible through installation of a high-speed adjustable carton-sealing machine which closes and glues the package flaps. This new packaging approach not only gives the cartons greater rigidity and strength, providing improved insurance against heavy parts springing package flaps open and becoming lost, but also is the buyer's guarantee that he is receiving genuine parts as identified on the box. The sealed packages eliminate dust seepage through the ends of the carton and hold their shape better when stacked on sales-outlet shelves or counters.

Folding cartons are received by the manufacturer flat, with the ends unsealed. It is no longer necessary for the closing flaps to be brought together manually. Instead, operators merely squeeze the blanks from the side, leaving both ends open and inserting fuel pumps or other parts into the center of the hollow tube thus formed. With flaps in open position, the cartons are then placed on the infeed conveyor, where spaced flights carry them to the sealing unit. Here glue is automatically applied to the exposed flaps and the flaps are closed without operator attention as the boxes move through the machine, finally passing through a compression section which holds the flaps securely flat until the adhesive has had a chance to set. Upon reaching the end of the outfeed conveyor, the cartons are removed from the line and packed in corrugated shipping cases. This new arrangement releases several workers for more important duties in the plant.

Of particular interest to Airtex officials, in view of the number of sizes of packages which must be handled and the frequent switches from solid kraft to corrugated containers, is the (This article continued on page 214)



BIG WHITE SPACE on end panels allows for legible imprinting of part name and number. With imprinting, package inventory is much simplified.



NEW CLOSING MACHINE for glue-end cartons has wide adjustability, handles wide range of carton sizes and materials, including folding box-board and corrugated. Output is speeded, products better protected.

24TH

NATIONAL PACKAGING CONFERENCE AND EXPOSITION

AMA

Bigger, better and more informative than ever. That was the general reaction to the American Management Assn.'s 24th National Packaging Exposition and Conference, which drew to a close in Chicago on Thursday, April 21, after a record-breaking four-day run. On practically every major count—total attendance, number of exhibitors, amount of exhibit space and number of speakers participating in the conference sessions—this year's big packaging event outstripped all previous ones.

At the annual meeting of the Exhibitors Advisory Council it was agreed that the show will be held next year in Atlantic City, April 9 to 12, and probably will return to the same location in Chicago in mid-April of 1957. Show hours next year will revert to the old schedule: Monday, 12 noon to 6 p. m.; Tuesday, 12 noon to 9 p. m.; Wednesday, 12 noon to 6 p. m.; Thursday, 10 a. m. to 3 p. m.

Exceeding predictions, attendance at the 1955 Exposition and Conference went over 31,000, despite unfavorable weather. The show record was surprisingly broken on the final day, when there were 4,050 new registrants, as against a high of 1,600 for any previous fourth day. Conference registration, which is included in the total, was 1,050.

The attendance record was set despite unfavorable weather—alternating heat and rain—and the unfavorable location. The Exposition, because of its size, had to be located in the International Amphitheatre at the U.S. Stockyards several miles southwest of the Loop, where Conference sessions were run concurrently at the Palmer House. Shuttle busses on a frequent schedule connected the two sites.

At the Amphitheatre there were 382 companies exhibiting, occupying a total of about 140,000 sq. ft., as against 362 companies in 125,000 sq. ft. at Atlantic City last year. As in the past, the Exposition was under the management of Clapp & Poliak, Inc.

Particularly striking this year was the size and elaborateness of displays, even those of the smaller companies. There was general agreement among exhibitors and visitors that this was the most beautiful show ever held. As usual, displays bracketed the entire range of packaging materials, machinery and services, and reflected current trends in the field in increased emphasis on such things as formed plastics, aerosols, plastic bottles and new films and coatings. "Faster and more automatic" were characteristics of the dozens of new machinery developments. It is perhaps noteworthy that the largest single booth in the show was occupied by a machinery company which is a comparative newcomer in these ranks.

Also setting a record this year was the comprehensive conference program, including approximately 50 speakers during the three days of morning and afternoon sessions. Luncheon was served each day. Arrangement of a particularly broad program was facilitated by the scheduling of concurrent meetings during each of the last five sessions.

The condensed report which follows gives the substance of each speaker's remarks:

MONDAY MORNING

How to Cut Costs in Warehousing and Materials Handling
Chairman, W. L. ROMNEY, Technical Director of Packaging,

Procter & Gamble Co., Cincinnati, Ohio, AMA Vice President in Charge of Packaging Division.

ALEXANDER PROUDFOOT, *Consultant, Chicago*—Hand-to-mouth buying by retail outlets and wholesalers is forcing unit-pack breakdowns upon manufacturers and wholesalers to hold down cost increases on handling small orders. The huge increases in unit handlings occasioned by order "fractioning," while making possible inventory reduction for wholesalers and their outlets, tremendously increase handling costs without compensating dollar sales increases. The higher cost of small orders is now forcing greater efficiency in handling costs by manufacturers and wholesalers in warehousing, order filling, packing, materials handling, shipping and routing.

By means of scheduling, huge savings were obtained for a large, nationally known manufacturer in its New Jersey and Missouri distribution points. Labor savings of from nearly one-third to a little more than one-half the personnel in these operations were realized. Installations of space-saving and materials-handling cost reduction for two nationally known oil companies resulted in consolidation of distribution points and produced personnel savings not originally expected.

The biggest savings opportunity still open in almost every manufacturing and distributing company we have analyzed results from the steady, hour after hour flow of manhour and machine-hour usage, striving toward the ideal target of 100% absorption. There are now entirely too many "stop and start" service, maintenance and work-assignment delays in nearly every company's flow of work, as well as failures of materials, supplies, components and men to arrive at the right places, in the quantities and at the time needed.

We feel that this area represents the largest remaining segment of unexploited opportunity for cost reduction and customer-service improvement.

A. T. MILLEA, *Supervisor, Field Distribution Service, Sylvania Electric Products, Inc., Melrose Park, Ill.*—We at Sylvania have examined the basic relationship of costs and volume in warehousing to determine how we would make worthwhile method improvements designed to improve time service on orders while effecting substantial operating-cost reductions. We have installed new methods as a result of an intensive study made at our 150,000 sq. ft. Melrose Park warehouse.

The first requisite of improved production is to convert order filling to a "scheduled" or time basis. We have accomplished this by determining the amount of work each order filler can perform in an allotted time and then signing out that amount of work at definite intervals throughout the day.

To accomplish this, a sign-out clerk is used to route and sort all orders. He is provided with a list showing number of cases to be signed out per hour to each order filler. A sign-out control sheet is provided for recording hourly sign-outs. Close cooperation between order fillers and stockmen is essential for order filling to proceed without interruption and with best possible productivity.

The stockman is responsible for housekeeping within his area and for reporting noticeable variances between stock records and quantities of merchandise on hand. He works with the shipping clerk to make certain all orders are shipped

promptly after they have been filled. To keep location control of all items in the warehouse, we have a location-control clerk who works with the stockman to make certain that adequate records of all lots of reserve merchandise are kept.

The starting point in the physical handling of merchandise is the receiving operation. It is highly important that all stock receipts be handled as quickly as possible to make full use of the existing dock and storage areas, while avoiding delays in the shipment of orders.

EUGENE H. SAXTAN, *Vice President and Treasurer, Liggett Drug Co., Inc., New York*—Probably most important in our inventory-control program is application of the principle of VAROMOM—Velocity and Rhythm of Movement of Merchandise. Under this principle we look upon the warehouse as an integral part of our store merchandising program, which starts with the merchandise department manager and moves directly through the warehouse and the store to the consumer. We do not intend that merchandise shall be stored in the warehouse; we expect it to be distributed from the warehouse. Many times we gear our sales plans to the date of arrival of merchandise at the warehouse.

In approaching the problem of inventory control, we first proceeded to reduce available warehouse space by leasing 15% to an outside company, making it necessary to reduce our inventory. We then assigned certain warehouse areas to handle special merchandise. A careful study of items which were not moved resulted in elimination of 3,500 items from our warehouse stock. By operating a balanced warehouse, we have been able to increase the number of outlets served by more than 50%, accomplishing this in a smaller warehouse area, with a lower inventory, greatly increased shipping volume and lower warehouse operating expense.

Every item in the warehouse is covered by a punched card in a master file in our merchandise-control department. This card serves as a standard for nomenclature, description, size, price (retail and cost) for the item. The punched card also contains the code number assigned to the item, which is applied to the warehouse shelves and also appears on the order form. The punched cards are used as a master deck and each card is created at the time an order is placed with a supplier for a new item. From the master deck, other cards are duplicated for such purposes as periodic checks of inventory on hand. This system enables us to maintain stock records in our New York offices even though warehouses are in Boston and Atlanta.

H. R. MACDONALD, *Warehouse Superintendent, Lever Bros. Co., Hammond, Ind.*—As part of an over-all program of expanding plant warehousing facilities, it was decided to construct on the plant site a complete distribution center, replacing public warehouse space, and to include the most modern materials-handling equipment to reduce manual product handling to a minimum. The greatest problem was to develop a means of conveying all products from the production departments to a central area on the second floor, where it had been decided to install an automatic pallet loader—in preparation for which all products had to be separated according to pack. Separate conveyor belts would have been unnecessarily expensive in duplication of conveyors for a distance of more than 800 ft. and also in loss of headroom.

Mr. MacDonald explained how products which have been indiscriminately combined on a conveyor belt running over the main aisle of the second floor are separated, transferred and accumulated into pallet loads ready for shipment or storage.

Order packing in our operation is becoming increasingly important. Where in the past we may have shipped infrequent truckloads of one pack, we now ship more frequent truckloads containing a mixture of packs. As orders are received from our regional billing office, they are screened by the traffic department and earmarked generally into one of three classifications—truckload, pool truck and L.T.L. The day before shipment,

a member of the warehouse supervision also screens orders to determine the truck and personnel requirements needed to handle the anticipated volume. Trucks are then scheduled for specific times based on this determination. On the fork-truck operator's tally sheet or "pick sheet" are listed all the packs in the order in which they should be selected, to give proper weight distribution for most truckloads. This sheet is given to the fork-truck operator and becomes the basis for loading the truck.

To facilitate handling L.T.L. orders, we recently installed a selection line consisting of a 75-ft. belt conveyor, along which is placed a complete selection of our products. It is manned by a caller, two pickers, a stenciler and a loader to assist the truck driver. Since installation of this line, our cost for this type of loading has approximately halved.

MONDAY AFTERNOON

Packaging to Increase Hardware Sales

Chairman, P. L. COSGRAVE, Consultant, Milburn, N. J.

JAMES B. THOMPSON, *President, Stambaugh-Thompson Co., Youngstown, Ohio*—The rapid development of suburban shopping centers presents both a challenge and an opportunity to the hardware industry. Our first move has been the redesigning of our fixtures. Merchandise has come out into the open. As far as is practically possible, fixtures are designed so that merchandise is stocked and sold out of the same compartment.

This new fixture design makes important savings in handling, in selling and in the use of space, but at the same time it created the need for completely new packaging of most hardware merchandise.

Much can be accomplished in reducing the amount of merchandise shipped out of warehouses in broken packages. Studies should be made of the quantities in which stores customarily buy and the merchandise packaged in those quantities. Present standard packages are in many cases much too large.

Pricing consumes much time. In every case, there should be a place for a price designed into the package.

Too often lack of proper identification causes the store to order the wrong merchandise or to fail entirely to order it.

Customers make full use of all information provided about hardware merchandise. They enjoy absorbing it—it's not a chore, it's a pleasure. In order to provide this information, we augment the data on the package by the use of numerous signs. We would like to see packaging provide more of this information.

Before you get the impression that we regard all carding as an unmixed blessing and the answer to our prayers, let me tell you some things that are wrong with it. Carded hardware makes an awkward-shaped package that won't stack neatly. There must be a better way. We think maybe that way is to hang the hardware on hooks. Some inventive person may be able to devise a hook with a spring, so that all of the items will be pushed to the other end of the hook and present a uniform and neat appearance.

Even directions for use are sometimes baffling. We suggest that the writer be someone not connected with the production of the product, to avoid trade terms and technical jargon.

Large type is important for any message you have to deliver. If you doubt the importance of this, I can only point out that some 67% of the adults of this nation wear glasses today.

Tools do not need to be boxed, but we think they are greatly in need of some kind of labeling or packaging that will convey information to the customers.

One of the big gripes, of course, is the merchandise that has to be laboriously counted out to fill each order, because of lack of proper packaging. This is because the quantities in the packages are larger than a store wants to purchase at one time. The manufacturer who will place his goods in the right-sized packages will greatly endear himself to hardware jobbers.

The one way in which manufacturers can contribute most

to reducing warehouse expense, at the least cost to themselves, is by seeing to it that complete, accurate and correct information as to the contents of a shipping carton is on the outside.

JOSEPH E. SIMON, *Secretary-Treasurer, Keystone Brass & Rubber Co., Philadelphia, Pa.*—We have had ample proof that no product is too prosaic, too mundane, not to profit, and profit greatly, by attractive packaging.

What do we need in packaging to increase hardware sales? Mr. Simon listed nine points: (1) A visual package that invites pick-up. (2) A silent salesman planned for self service. (3) A package that will create impulse buying. (4) A package that delivers a short sales message. (5) A package that will have "directions for use." (6) A package that protects the merchandise and assures delivery to the consumer in perfect condition. (7) A package that is not expensive. (8) A package unit easily handled, warehoused and displayed. (9) Outer package units not too large for an individual retailer to buy.

Vacuum-formed packaging is our answer to these requirements. The transparent vacuum-formed package costs only a few pennies more. In our present economy, this is a sales expense.

We started by reviewing our items that had the greatest consumer appeal and would best lend themselves to vacuum-formed packaging. After careful selection of a preliminary group of items, we moved on to the technical development of the packages. We recognized that we required the help of a package manufacturer who was equipped to work with us and would be willing to spend the necessary time and effort to experiment and develop the line with us.

Our line was a "first" in many respects. Vacuum packaging is comparatively new and had been used for the most part to package flat, light-weight articles. We put up roadblocks right from the start by requiring: (1) much larger transparent areas than had previously been used; (2) a third-dimensional depth up to as much as 1 in.; (3) thermoplastic forms to support to 10 oz.

This required engineering, as it is not an easy task to support this amount of weight in a vacuum-formed package. Before going ahead with the actual packaging, we had to be sure that the vacuum-formed piece and the card were the correct size and weight to carry the product.

And we had to get this beautiful package to the consumer without damage. We called in an outside corrugated-case manufacturer and worked closely with him and the manufacturer of the vacuum-formed packages.

A carton had to be engineered and designed to withstand the roughest kind of handling.

Our method of assembly consists of a series of steel plates cut out to hold the various cards and the inverted vacuum-formed piece. The merchandise is placed in the piece of formed plastic, after which the back cover of the card is sealed with air pressure applied by a fast foot pedal. This leaves the operator's hands free for the task of placing the card and the plastic piece on the steel plate, one with the left hand, the other with the right. The merchandise is then placed in the plastic. A complete assembly unit is one machine and two operators.

To Standardize, Central Control Is Essential

Chairman, R. CHESTER REED, *Supervisor, Packages & Shipping, The Texas Co., New York.*

F. W. LANGNER, *Packaging Coordinator, Socony-Vacuum Oil Co., Inc. New York*—Here are some before and after figures in Socony-Vacuum's package simplification program. Let's use 1950 as the base of comparison and call it 100%. Now, five years later, we are using 48.8% less package sizes and our ultimate goal is a reduction of 62.7%. We also have reduced the variations of lithography and printing by 52%, with the objective of reducing it by 69.5%.

A rather graphic before and after picture of the brand and package changes is shown by the records of the I.B.M. machines themselves. In 1950 we required 264 sheets of paper to give us the necessary tabulations. Similar data for 1954 required only 134 sheets. This 49% reduction of paper work is a true index of the simplification program's effectiveness.

The main program took four years of constant work. Any change that was made had to be weighed not only from a packaging standpoint, but from its effect on our domestic and worldwide business. Also, every change meant that we had to consider the inventory position of the empty and full packages in our warehouses.

Efficiency in Packaging the Multiproduct Line

Chairman, CHARLES F. SCHOKMILLER, *Manager, Manufacturing Dept., Grove Laboratories, Inc., St. Louis, Mo.*

R. J. GRANT, *Manufacturing Development, Engineering Dept., AC Spark Plug Division, General Motors Corp., Flint Mich.*—Packaging must learn to make full use of the engineering service departments available.

Packaging personnel, both salaried and hourly, must be properly trained in methods principles, especially the questioning attitude.

For certain types of low production service packaging, bench packing, though admittedly "old fashioned," is far from obsolete.

Before buying expensive labor-saving devices, it should be determined whether the same result can be obtained through application of less costly layout changes and methods techniques.

What Equipment Do You Need to Test Your Package?

Chairman, C. L. RUMBERGER, *Vice President, Research & Quality Control Division, H. J. Heinz Co., Pittsburgh, Pa.*

PAUL O. VOGT, *Consultant, Packaging, Warehousing & Shipping, General Electric Co., Schenectady, N. Y.*—There are no set standards acceptable to all interested groups for testing shipping containers. However, we do know that three conditions usually occur when a package is shipped, namely: compression, vibration, impact.

The only means of determining whether or not any container will protect its contents against expected compressive forces, except by subjecting that container to actual conditions, is the compression test.

The capacity of a container to protect its contents against vibration occurring during transportation is measured on a vibration tester. The vibration test is an accelerated test and permits us to simulate in the laboratory actual conditions in transportation. Our standard minimum test of 1 G plus for 1 hr. is approximately equal to 1,000 miles in normal transportation.

The third and most severe condition a container will be subjected to is impact. To measure the impact resistance of small packaged products, the scaffold-type drop tester is used. This permits us to control the direction and intensity of impact. Containers weighing over 50 lbs. are impact tested on our small conbur tester, which also permits us to control the direction and intensity of impact. Containers that exceed the maximum of the small conbur tester are tested on our new 6,000-lb. conbur tester. This tester is also used for testing palletized and multiple loads.

C. M. WOODCOCK, JR., *Section Head, Packaging Research Section, General Foods Corp., Hoboken, N. J.*—The fundamental reason for the existence of a packaging research laboratory within General Foods is to help insure that the company's food products are received by our customers in the same attractive, wholesome condition in which they leave our plants. During

a food's trip between packing plant and kitchen, the factor of primary concern to a food-packaging laboratory is usually moisture in some form or other. The problem with some foods is moisture gain, while with others it is moisture loss.

The basic tool used in our laboratory for defining moisture limits is the moisture equilibrium test. In this test, small samples of a food product are freely exposed to a series of controlled relative humidities ranging from about 10 up to about 86%. The exposure takes place in specially constructed units where the sample may be weighed without being removed from the unit.

Accelerated storage tests on completed packages generally yield more valuable information than does the WVT test. In package tests, several important characteristics are integrated and measured simultaneously—basic moisture transmission rate, strength and effectiveness of seals, mechanical handling characteristics, resistance to breakdown at sharp corner folds, and others. The instrument used in most of this work is the atmosphere control cabinet.

TUESDAY MORNING

What Food Supermarkets Want in Packaging

Chairman, C. W. KAUFMAN, Vice President, Research and Development, Kraft Foods Co., Chicago.

JAMES COOKE, Vice President, Penn Fruit Co., Philadelphia, Pa.—The inventory and handling problem at the retail store is aggravated by the number of units packed in the individual case. At the present time, there is very little relationship between merchandise movement and case size. In many instances manufacturers pack their slowest-moving items in the same size of case as their fastest-moving ones.

The present practice of packing cases without regard to movement means that even the large-volume retailer is burdened with millions of dollars in unnecessary inventory, crowded backrooms, crowded shelves, increased damage and poor rotation.

The best utilization of counter frontage and cube has become a major objective. This means that you should design your packages in proportions that assure equitable shelf-frontage representation and easy-stacking characteristics. A manufacturer is well advised to print the sides and ends of his packages so that the items can be identified by the customer no matter how they are displayed on the shelf.

At the present time, many packages cannot be stacked except by using improvised cardboard layers and other time-consuming devices. A few progressive firms who pack merchandise in glass jars have engineered their products for easy stacking. This is an illustration of what can be done without affecting appearance or cost.

Tear strips on cases would not only save time, but would avoid an enormous amount of damage to case contents. The marking problem is complicated by the fact that the space for marking often does not appear at the proper place when cases are opened.

It seems to me that some degree of package standardization within broad merchandise categories would result in enormous savings.

Contrary to general belief, edible merchandise is not preserved in perpetuity just because it is put in a package. We are dependent on codes to check freshness. Yet many items are not coded. If the processor is going to discharge his responsibility for quality control to the consumer, he must first devise an intelligible and universal system of coding.

The wrappings of many products simply do not stand up under the abuse of self service. Stock losses from damaged merchandise are costly to the retailer. The loss of sales appeal from shopworn packages is also costly to the manufacturer and processor.

One of the common hazards of self-service selling is pilferage.

If small items are not designed with the pilferage problem in mind, they do not get a chance on supermarket shelves.

By designing your products to solve operational problems, you can do as much as your sales force to sell your product and keep it acceptable to the retailer. As the impartial purveyors of all the brands, we retailers view with immense calm the huckstering, the maneuverings, claims and coupons of competing brands. We can, however, get very enthusiastic about case and package improvements that recognize our operating problems.

New Demands in Packaging Drugs, Toiletries, Cosmetics

Chairman, J. E. MARMON, Director of Product Methods & Package Development Division, Eli Lilly & Co., Indianapolis.

F. B. KIENZLE, District Vice President, McKesson & Robbins, Inc., Chicago—We in the National Wholesale Druggists' Assn. have found that few shipping containers in our own industry or in any other industry serve a *real marketing function*. Our objective has been to find out just what shipping containers should do for the manufacturer's product.

NWDA has developed a few simplified rules for getting the most out of shipping containers: (1) for easy identification of the container and (2) for getting the most sales appeal into the package.

For proper identification, the following are recommended: (a) the complete name of the product, (b) style or strength just over the name, (c) company name below the product name, (d) quantity in upper left-hand corner, (e) package size and/or price in upper right-hand corner, (f) handling and storage instructions on the top, (g) same complete information on all four sides; and (h) leave a space on top for an address label.

For sales appeal, it is suggested that manufacturers: (a) select type faces with large openings, (b) keep corners of cases free from printing, (c) avoid large blocks of solid color, (d) select good contrasting color combinations; (e) clearly indicate "cut lines" and pack accordingly, (f) give display and pricing instructions on top.

PAUL C. OLSEN, Director of Marketing Research, Topics Publishing Co., New York.—Dr. Olsen related packaging problems to the changing selling procedures in drug stores. The change from a situation in which drug-store prescription volume amounted 15 years ago to about \$3,000 per store per year to one in which now the prescription volume per store per year averages over \$18,000 has brought with it a number of problems and consequences, he said.

Fifteen years ago at least $\frac{3}{4}$ and probably $\frac{1}{2}$ of the prescriptions filled in drug stores were compounded there in accordance with physicians' specifications. Now there has been a complete reversal of that situation. Four out of five, and oftentimes nine out of 10, and in some areas, even 19 out of 20 prescriptions are single-ingredient, proprietary and trademarked specialties. One result has been to create a space problem on stock-keeping and storage in drug-store prescription departments.

The cost of ingredients, containers and supplies is averaging 60% instead of the 35% of 15 years ago because somewhere between 80 and 95% of all drug-store prescriptions now are for single-ingredient, proprietary, or trademarked articles that are received in drug stores in the form in which they are dispensed. On \$18,000 annual per store average prescription volume, that gives therefore a cost for ingredients, containers and supplies of 60% of that amount or \$10,800.

There are now about 700 drug stores in this country with self-selection and check-out methods like those used in supermarkets in the retail grocery trade. I certainly am not predicting that a movement is in the making in the retail drug trade that is as extensive and revolutionary as has occurred in the past two decades in the grocery trade. I am saying, rather, that this is a development that further emphasizes the vital and increasingly important role of packaging in the retail drug trade.

Cost-Reduction Methods in Industrial Packaging

Chairman, RALPH A. O'REILLY, JR., *Packaging Engineer, General Motors Corp., Detroit, Mich.*

ELMER A. KRUSE, *Supervisor of Packaging Specifications, Wagner Electric Corp., St. Louis, Mo.*—The operating costs of our division as of Jan. 1, 1955, in comparison with Jan. 1, 1953, have been reduced by \$400,000 per year even though we are handling a greater volume of material and in some instances have improved our packages.

For example, one problem was solved by utilizing better materials-handling methods in the handling of packaging materials. The containers concerned in this instance are convolute-wound, metal-end containers which we receive with the bottom metal cover crimped in place.

Formerly a girl took the cans from a paper bag and placed them on a tray in preparation for the filling operation. This operation was costing us 6 min. per 100 cans. When this is multiplied by a yearly usage of from 10 to 12 million cans, it becomes a sizable amount.

It didn't seem too far fetched that the trays of cans could be stacked on pallets, so that angle was checked. We found that if we would furnish the trays and pallets, the supplier would stack the cans on trays and palletize them for us with no added cost, this would eliminate his cost of bags which would take care of the extra handling he would have. We determined that we would need 25,000 trays and 200 pallets, and invested in these. We have invested about \$6,500 in trays and pallets and realized a reduction of at least \$35,000 per year.

In another cost-saving project, we had a machine built for us that would: (1) Set up the cartons for machine parts automatically. (2) Print the part number on the carton. (3) Carry the opened carton by a point where the item could be dropped in. (4) Apply glue, seal the carton and discharge on a packing table. (5) Be adjustable to at least three different sizes. (6) And especially give us a greater output per day.

The maximum output on this machine is about 25,000 units per day with four people; we have not yet hit 25,000, but we have exceeded 24,000, so let's just say 24,000. Compare this with the previous method of 8,000 per day with five people. It represents an increase in output per person of from 1,600 to 6,000 per day.

FRANK J. MILLER, *Supervising Engineer, U. S. Radiator Corp., Detroit, Mich.*—The U.S.-11B Cast Iron Gas Fired Hot Water Boiler packaged unit formerly consisted of boiler sections, assembled at our plant, in four unit packages. Box No. 1 contained miscellaneous boiler parts, various fittings, operating controls and castings such as burner heads, burner tubes and flue covers. Carton No. 1 housed the sheet-metal draft diverter which is placed in the flue breeching at the top of the boiler. Crate No. 1 was the metal jacket casing which encloses the boiler. The final item, shipped loose, was the steel base which supported the boiler sections and controls and housed the burners.

To meet and beat competition, we had to provide this boiler as a complete package which could be simply uncrated, connected to water and gas lines, and put into service. That is exactly what we did. We went first to our drawing boards, then the laboratory, and redesigned the boiler to cut weight, cut cost and eliminate as many loose parts as possible, bearing in mind all the while that our goal must be a complete boiler assembly adaptable to being shipped as such. Finally, we evolved an easy-to-assemble and easy-to-ship wirebound container in which to ship the unit.

The success of the redesign and packaging of this boiler has pointed clearly to the path we have to follow. We are now in the process of revising our other lines to meet, as nearly as possible, the current demand—a packaged product that will install itself.

C. J. PHISCATOR, *Packaging Engineer, Whirlpool Corp., St. Joseph, Mich.*—Our package for washers and dryers consists of a 350-lb.-test DW RSC carton, with a 400-lb.-test solid fibre sheet bottom pad. The carton is held away from the product by corner posts made of either double-wall or multiwall scored sheets. Top protection is gained by pads or blocks to give cushioning and support. All contact points between fillers and the product are protected with a non-abrasive, non-staining material.

At the first station on the assembly line, a building pallet is placed under the cabinet; this is replaced at the first station on the packing line by the bottom pad.

The machine is then pushed off the pallet remover, over a section of roller conveyor which has a chute set in between the rollers. The chute holds the bottom pad in exact location until the edge of the machine catches it; it then rolls the sheet under the machine in exact location. It is then picked up on a belt conveyor, where the carton is placed over the machine and the corner posts inserted. At the next station, top pads are added and the carton is ready for closing. This is done with the aid of a special inter-flap closure, developed by our engineering department, and large case sealers. At the end of the case sealer, the carton receives the proper stenciling and is then taken away by special grab trucks, either for storage or shipping.

TUESDAY AFTERNOON

How to Pack and Handle Bulky Materials

Chairman, PAUL O. VOGT, *Consultant, Packaging, Warehousing and Shipping, General Electric Co., Schenectady, N. Y.*

Plastic Pellets. H. W. BULL, *Packaging Coordinator, The Dow Chemical Co., Midland, Mich.*—The shipment of free-flowing materials in large corrugated boxes is a relatively recent development presenting many new problems and interesting possibilities. The product we ship in bulk boxes is Styron plastic, multicolored granules measuring about $\frac{1}{8}$ in. on a side and fairly free flowing. For some customers the 1,000-lb. bulk box may be desirable. In their plants, this unit may be economically handled and unloaded, efficiently stored both in knocked-down and filled form in the warehouse and also re-used for shipment of molded articles. It can be rapidly emptied by a pouring-spout modification or an air-conveying system.

Due to the free-flowing properties of Styron granules, a considerable side thrust developed which caused bulging of the sides. Not until it was realized that very heavy tubes would be needed and the box height reduced was the excessive bulging brought under control. The bottom cap did not fit snugly to the sides of the box, leaving a trough which tended to catch dirt or water. This was eliminated by placing the cap between the two tubes used to form the sides of the box. Early trouble experienced with imperfectly cut tube ends that permitted bits of corrugated board to fall into the plastic granules during filling were solved by the box manufacturer.

The disposable pallets used were initially made very light. These proved satisfactory for general truck use and warehousing, but were replaced by stronger pallets able to withstand forces generated when a freight car is "humped." For better handling, boxes are banded twice, with location of the banding printed in red on the outer tube. Another problem confronting the operator in charge of filling was placement of the cover on the box. A home-made "shoe horn" solved this difficulty.

Construction of the box starts with a low cost, disposable pallet 42 by 34 by 5 in. in size and weighing 17 lbs. Next the bottom cap, of 500-lb.-test B-flute construction, is placed on the pallet and the inner corrugated tube of 700-lb., double-walled, A- and B-flute is placed inside the bottom cap. Then the outer tube, measuring 40 by 32 by 36 in. and of the same construction as the inner section, is placed over the inner unit and bottom cap. After filling with product, the cover cap is

put in place; and finally, the box is banded to the pallet. Metal angles are used to prevent the banding from puncturing the box edges.

Hardware Parts. J. F. CURTIN, *Packaging Engineer, Ternstedt Division, General Motors Corp., Trenton, N. J.*—About two years ago a program to establish definite packing requirements and labeling identification on each purchased part was inaugurated in our Trenton plant. Our aim was to integrate vendors' packaging into our materials-handling system as far as possible, consistent with cost. In instituting the specified vendor packaging program, much thought was given to the re-use of the materials. Hence, we specify the incoming containers to fit our outbound container requirements. All unit-load material is packed in one-half regular slotted cartons made of 275-lb.-test, double-wall corrugated, with a common cover and units glued together on the pallet. A standard pallet size 41 by 35 in. is specified. In addition, two basic carton sizes are prescribed for parts not subject to unit loading—12 by 11 by 12 in. and 12 by 11 by 6.

Some time ago we enlisted vendor cooperation in supplying our packing materials, to change from the individual bundling method with its high labor cost for handling to unit loading.

By using a simple wooden loading plug 4 in. long, we have provided a tool for easy packaging of irregularly shaped molding strips in paper tubing. Parts with sharp ends now slide easily into place and paper waste is cut to a minimum. In adopting this method to replace manual loading, one of our divisions was able to reduce tube widths as much as 33%. To eliminate waste yet insure that each carton will have exactly the correct amount of gummed tape, a tape-usage control system was established.

Our most rewarding innovation, the "no-block" pallet, is manufactured of rough resawed hardwood and is of simple lattice construction. Stringers are full-dimensioned 1 by 3 in. and the deck contains five boards of full 1/2-by-4-in. lumber. Advantages of this pallet, in comparison with the block type, include a 50 cent saving each in material cost in our area; savings in shipping costs (10 lb. less weight); and saving in cube through reduction of height in the pallet.

Plastic Resin. JAMES A. MITCHELL, *Project Engineer, Engineering Department, Carbide & Carbon Chemicals Co., South Charleston, W. Va.*—A new bulk-handling system has recently been developed by Union Carbide & Carbon Corp. in cooperation with the U. S. Rubber Co. for shipment of polyethylene resins. Permitting shipment by any standard unit used for bulk transportation, this method provides economy in the form of reduced handling costs, reduced resin losses and release of warehouse space; ease of handling through use of large unit loads and fully mechanized equipment; and increased product quality from elimination of usual sources of contamination.

A careful study of a polychloroprene collapsible container manufactured by U. S. Rubber Co. indicated that with certain modifications this container could offer a low-cost, contamination-free, weatherproof system adaptable to meet varied requirements. The container has a molded diameter of 7 ft. 2 in. and a height of 8 ft. This size permits the use of standard open-top truck trailers and is the maximum-sized unit for loading seven containers on a standard gondola car.

At the producer's plant, a lift truck picks up the collapsed, empty containers at storage point and brings them into the loading enclosure. Containers are suspended above a special unit where they are inflated, inspected and washed under pressure, then air dried. They are then moved by a light-duty, mono-rail system to a filling cradle which is tilted to a 45-deg. angle. Filling connection is made to a fitted spout while the container is under pressure, through the use of a special stocking valve. Filled containers are weighed and stored in the yard area prior to shipment. As shipments are required, containers are loaded by a lift truck into railroad gondolas or truck trailers.

At the user's plant, unloading may be handled by a lift truck or mono-rail system, after which containers are moved to an outside storage area. As required, they are moved to the emptying area and placed in a specially designed emptying fixture. After emptying, the container is removed from the fixture, collapsed, folded and returned to consumer's yard area for accumulation. Periodically, containers are returned to the producer for refilling.

A unit load represented by this container replaces the handling of 190 paper bags. A full carload of paper bags requires an average of 16 manhours for unloading to storage, whereas the equivalent volume in collapsible containers can be unloaded in 1/4 hr. or less.

Making the Most of Packaging Machinery—(Panel Discussion).

Chairman, EDWARD W. LOVE, Production Manager, Bristol-Myers Products Division, Bristol-Myers Co., Hillside, N. J.

An Approach to Automation Through Instrumentation—LOWELL LEDGETT, *Assistant Chief Engineer, Colgate-Palmolive Co., Jersey City, N. J.*—As applied to packaging equipment, the most significant element of newness is the combination of instrumentation and automatic machinery as partners in automation. In packaging equipment a high degree of automaticity has been achieved through mechanization alone; viz., precision manipulation of materials to establish position relationships, form, attachment, fill, closure, etc. Measurement of results by instruments is not uncommon, but using this intelligence for automatic feed-back control is more recent. Automatic feed-back control is applicable on gravimetric and volumetric filling, registration and product physical-property changes. Tightness of closures, leakers, etc., still require manual or visual inspection.

By superimposing measurement and control instrumentation, the quality of automatic machine operations can be maintained or improved at a saving in operator attention, including quality-control personnel, analogous to the benefits attained in chemical-process systems. This will have to be a team effort in the packaging-equipment field: the manufacturer must design, develop, build and continue to improve, based on the user's experience; the user must organize, train, develop and constantly improve personnel with adequate facilities for operation and maintenance of such equipment.

Will automatic control machinery pay off? Only a complete analysis of each application can furnish the answer. Aside from any economic justification, the return can be high from product quality-control advantages.

Increasing Efficiency Through Integrated Change-Over Units.

R. V. THOMPSON, *Manager, Production Methods Dept., Eli Lilly & Co., Indianapolis, Ind.*—Cases can be cited where the required change parts for a given production machine cost more than the machine itself. Another evil of the change-parts situation is the difficulty often encountered in procurement of additional change parts for an existing machine. There is need for packaging equipment with "built-in" change parts that are quickly adjustable for rapid change-over and for the wide range of packaging materials of a given equipment user. It should be most nearly possible to approach full-line utility if equipment is adjustable without requiring separate change parts. To go one step further, provide these integrated attachments so they can be adjusted without use of tools.

Automatic cartoners are available for which change parts are virtually eliminated even though a variety of sizes and shapes of packages are cartoned. Hand-wheel adjustment has been used to particular advantage. We know of a development carried out for a labeling machine which had the effect of providing an integrated unit set for one particular label size. To change from one label to another, the label holder only needs to be removed and the change-over label holder slipped into place.

Corrective and Preventive Maintenance to Insure Maximum Output. GEORGE M. WOODRUFF, *Manager of Machinery Development Dept., General Foods Corp., Battle Creek, Mich.*—Prime factors involved in mechanical-equipment maintenance include control of machine adjustments, wear or mechanical condition, lubrication and machine clean-up. It is important to begin the training of operating personnel during the initial "tune-up" period, when working standards for the control of the machines should be established.

When the mechanic or adjuster is tuning up a new machine, he starts a package through and adjusts each operation in succession until he can turn the machine by hand and produce the finished object. This can be done slowly by power. Settings and adjustments should be tested carefully before applying a power test, keeping a record of what has been done. Further refinements of some adjustments may have to be made under the power tests, with satisfactory settings recorded on the chart for future reference in proper maintenance of the equipment. Lubrication requirements should be recognized when a new machine is first received, and lubrication points and materials charted. Also, it is important to train some individual in the proper lubrication procedure and hold him responsible for fulfillment.

Machines must be cleaned systematically and regularly. In many canneries and food-processing plants, machines must be flushed with hot water or steam for sanitary reasons. In general, however, for many packagers it is more economical to leave the steam and air hoses out of the packaging rooms. One method is to wash machines down regularly with sponges and soapy water. An alternate method is to set control standards with tolerances for wear on the various machine elements, replacing these parts before lost motion begins to affect operating efficiencies. An auditing form is our major tool for maintenance control. All machines are audited against these standards after approximately 400 hrs. of operation. Deviations are reported to operating management and to maintenance authorities for prompt correction. In general, all reports are returned within two weeks with corrections indicated.

Pre-Packaging Meats and Fresh Foods

Chairman, JOHN A. WARREN, Technical Adviser, Packaging Division, AMA, who substituted for JOHN R. WHITAKER, American Stores Co., Philadelphia, Pa.

Research and Development of Vacuum Packaging by the Armour Organization. C. K. WEISMAN, *Manager of Development, Armour & Co., Chicago.*—There is perhaps no better example of how the packaging organization at Armour has worked together to solve a specific problem than to relate as a "case history" the story of the development and application of vacuum packaging with flexible materials to our Star bacon package.

All bacon can and does begin to lose its flavor and change color from the moment it comes off the slicer. After seven to 10 days, most of us could readily detect a difference if we could compare it with freshly sliced bacon.

The problem that has been plaguing the industry for years is how to hold that original fine flavor and goodness throughout the normal distribution cycle between our processing operation and the consumer's kitchen. We have experimented with at least several hundred kinds of packaging materials and with almost as many different kinds, shapes and forms of packages. Many of these have been and still are outstanding successes.

The search for a package that would have the desired marketing attributes and yet prolong the full-flavor and color period began some eight years ago—and has by no means ended yet. The requirements we set forth at that time were—and still are—comprised of the following:

1. Extend full-flavor retention for at least three weeks when kept under proper refrigeration, the maximum time expected to elapse between the initial slicing and final opening of the package in the home.

2. Provide a package which would have striking sales appeal.
3. Provide a package that would be producible at a total package cost (materials, labor, machinery, amortization, etc.) to be at least in the range of current packaging cost of other premium bacon.

The vacuum obtained within the package must be an almost perfect vacuum. In other words, the oxygen content within the container must be reduced to a minimum.

For our purposes and with the materials which have been developed for vacuum packaging of our bacon, we have determined that we must have an additional vacuum of not more than 15 millimeters absolute pressure. We have roughly computed that there will be no noticeable fall-off in flavor retention until the pressure within the package has risen to 75 millimeters—or going back to the conventional vacuum gauge, has gone down from about 29½ in. at sea level to 26½ in.

There are several transparent flexible materials and combinations of them that will retard the transmission of oxygen with sufficient effectiveness to hold a vacuum within the package below 75 millimeters of absolute pressure for at least five to six weeks.

Our current material as developed by our supplier is a lamination of cellophane and polyethylene with a rather heavy, pressure-sensitive-type adhesive layer. Each component contributes more than just one desirable function to the combined material and to the package. Neither we nor our supplier believe that this is the ultimate or perfect material, but as of today it is the most practical for functionality and economy.

It has taken us a long time, but we now believe that we have the outstanding package in industry for fresh sliced bacon. After 45 days, even our most expert tasters are willing to certify to the full flavor, freshness and aroma of the bacon. This is more than double the three-week goal which we were shooting for at the beginning of our research.

Each class of meat product presents new problems, but with the fundamental research on bacon available it was not too difficult to expand vacuum packaging to other areas. We have now on the market a complete line of sliced luncheon meat in vacuum packages and also several chunk-piece items. The future will see a continued expansion of vacuum packaging in the meat-packing industry.

Flexible Meat Packaging Materials and Their Selection. JOHN M. RAMSBOTTOM, *Head, Packaging Research Division, Swift & Co., Chicago.*—The suitable package for meats must meet two essential requirements, said Mr. Ramsbottom. It must protect the product through normal channels of distribution and be attractive in appearance. He ran through the list of materials which have been and are being used in this field—paper paper-board, waxed materials, films and foils—saying that there was no super packaging material to date that would meet all requirements. He distinguished between the different requirements for fresh frozen cooked meats and fresh meats.

He traced the development of meat-packaging materials starting with the early use of paper and the improvements in paper that have given it greater versatility by imparting moisture-resistant, wet-strength and greaseproof properties. He traced the development of the cellophane first introduced in 1925, the moistureproof cellophane made available in 1927, the heat-sealing cellophane introduced in 1932 and the moisture-proof cellophane developed in 1945 specifically for the meat-packing industry. He mentioned the advantages of cellophane for transparency and machinability and its effectiveness when combined with other films, such as the combinations of cellophane with Pliofilm, cellophane with polyethylene and the permanence of reverse printing which can be locked between two combined films.

He touched on the use of the shrinkable films for poultry products and the growing popularity of aluminum foil for overwraps on frozen meats and as pans and trays for frozen meat pies, frozen dinners and other specialties. He mentioned vinyl

nitrile film, introduced in 1948, for casings and the use of polystyrene film, introduced in 1951, recommended for windows on bacon packages. He mentioned the experiments with Mylar in the meat field, effective for its tensile strength, but at a disadvantage because so far it has been difficult to seal.

Every meat product, he said, has its own packaging requirements and while a variety of materials might do the job, cost considerations must always be weighed against costs of the materials which new materials replace.

Produce Packaging Potential. DONALD R. STOKES, *Marketing Research Div., U. S. Dept. of Agriculture, Washington, D. C.*—Packaging of fresh fruits and vegetables in consumer packages began quite a few years ago, but it still has a long way to go. Only about 20% of our fresh fruits and vegetables are marketed today in consumer packages.

Approximately 56 billion pounds of fresh fruits and vegetables are marketed annually. Some of these commodities may never be packaged in consumer units; for example, watermelons, cantaloupes and pumpkins. But about 50 billion pounds of produce conceivably could be so packaged eventually. About 11 billion pounds are being packaged in unit containers today.

A few commodities are just about 100% packaged in consumer units. These include cranberries and the various fresh berry crops, such as raspberries, strawberries and blueberries. In addition, there are such items as cole slaw, mixed salads and soup mixes which are 100% pre-packaged. The next-highest group, percentage-wise, consists of items which are 75 to 80% packaged and includes carrots, Brussel sprouts, kale and spinach.

Potatoes, of course, lead all other commodities in terms of actual pounds pre-packaged. More than 80% of fresh carrots are pre-packaged today. The pre-packaging of lettuce is only gradually developing. Great opportunities lie ahead for pre-packaging of other vegetables. Considerable research has been undertaken on packaging fresh asparagus, cauliflower, broccoli, celery and green beans, yet only a small volume of these items is pre-packaged today. Proper packaging of asparagus preserves flavor and tenderness.

Relatively, a smaller proportion of fresh fruits than of vegetables is packaged in consumer units. Apples are commonly pre-packaged in various types of bags, cartons and trays, but it is doubtful that more than 25% of the apple crop is packaged in consumer containers.

We welcome the continued cooperation of the packaging industry in helping growers and distributors of fresh fruits and vegetables to improve the packaging of their products.

WEDNESDAY MORNING

What Variety Stores Want in Packages

Chairman, EARLE G. MAY, Chairman of the Board, McLellan Stores Co., New York. Assistant Chairman, PHILIP W. SCHINDEL, Executive Director, Limited Price Variety Stores Assn., Inc., New York.

Variety Stores in 1955. MR. SCHINDEL—Last year variety stores did a volume of business of \$3,324,000,000. The period of greatest growth in variety stores is *right now*, in the year 1955. Since 1945, variety stores have spent over three-quarters of a billion dollars on modernization and on new stores. Old stores are being redesigned, refixed and, where necessary, enlarged. New stores are being built in all the centers where population has shifted and is shifting. The five-and-ten is a feature of every Main Street. It is still an important "downtown" store. It is growing and thriving in the suburbs and in the many new shopping centers. This tremendous program will not be completed for several more years.

A most significant development that affects packaging is the new fixturing of variety stores. The old one-level counter top has evolved in many directions. New fixtures have merchandised on many different levels. There is space for more merchandise,

larger assortments and more attractive displays. In all but the very busiest locations, there is a trend to put counters back to back, thus eliminating the traditional clerk aisle. Gondola-type fixtures, wall fixtures and shelves have been added. The net result is an increase in selling exposure, in some cases up to 40 to 50% in the same-sized store.

Variety stores made 6,648,000,000 separate sales last year—an average of 41 sales for every man, woman and child in the entire country.

Opportunity for Improved Packaging of Soft Goods. JAMES H. FRICK, *J. J. Newberry Co., New York*—Some soft-goods merchandise is now packaged; some is sold in bulk. Much of that which is packaged could be improved and, undoubtedly, its added attractiveness to customers would increase the rate of sales. Citing many examples, Mr. Frick summarized his remarks by listing a few general suggestions which will help to improve the packaging of soft-goods merchandise for variety stores:

1. Emphasize the use, size and other features of the product, rather than the name of the manufacturer. Feature one descriptive word or phrase that tells the customer the item is made of an outstanding material or by a superior process.

2. Instructions for use should be brief and clearly understandable. Do not put more on a package or tag than is essential.

3. Manufacturers should be conscious of the ever-changing packaging methods and materials, and not stay with any one package too long.

4. The size of any package should be determined by the selling features of the item. A package should be no larger than is necessary to show the customer the main points of its usage.

5. Card or package very small items to keep them from being lost in the maze of items displayed on a variety-store counter.

Better Sales Through Better Packaging of General Merchandise (Other Than Soft Goods).

WILLIAM A. KNAUBER, *G. C. Murphy Co., McKeesport, Pa.*—Merchandise in our stores must withstand customer handling and counter wear and tear, but our goods sell fairly rapidly. Adequate protection for perhaps a 45-to-60-day cycle is needed. Protection for a day or two is not enough; for a year or 18 months is too much. Most of our merchandise is highly competitive, so packaging must be adequate, yet as inexpensive as possible. A closer relationship between our companies and packaging-film manufacturers would enable us both to help reduce packaging errors.

Some of the outstanding examples of fine packaging are in lines which were formerly sold in bulk—ordinary household tacks. This problem of handling tacks was solved by the supplier, who came out with tacks of various sizes in clear plastic bottles or tubes with an attractive, colored cap. The wonder is that more ingenious suppliers don't try the same technique on other merchandise.

Another widely used and very satisfactory device is the carding of merchandise. This technique is adaptable to hardware, housewares, kitchenware, cosmetics, stationery, games—the list is practically endless. Carding is very useful with do-it-yourself equipment.

Often items which are packaged for the consumer are also cartoned for the store counter. Most variety stores don't use that carton. Nor is there room for some of the expensive cardboard display stands which cost some suppliers a good deal of money. Variety stores find most of the promotional material—including display stands and multicolored, screaming signs—sent to us is of little or no value. We cannot and don't use them. The same effort and just a part of that money spent on improving the consumer package would be a very worthwhile investment.

Operating Problems Affected by Packaging. S. P. ENGLISH, *Chicago District, S. S. Kresge Co., Detroit*—Mr. English discussed four operating problems which have a direct bearing

on more efficient distribution: end labeling, price marking, cartoning in usable quantities and merchandising counter space.

End labeling deals, he said, with the need for better and more information on the end of many packages and boxes. Think how much easier it would be for the customer and for store personnel to find the size and other information needed if visible on the end of the package.

He advocated a uniform place on all packages for the price mark, one that is visible no matter how the item is displayed.

Merchandise must be cartoned in such a way that it will always reach the customer fresh and completely usable. Cartons which contain merchandise in quantities most frequently ordered eliminate broken shipments from warehouse to store, eliminate the need for repackaging and greatly reduce the cost of warehouse handling.

This problem confronted one of the largest manufacturers of sundry drugs and cosmetics lines. The company was cartoning one product in gross lots. It was found that the usual store order was two dozen. It cost money to make a change, but this manufacturer did it and product sales through variety stores have increased greatly.

Summary. E. J. RENOWDEN, *F. W. Woolworth Co., New York*—In summarizing the panel discussion, Mr. Renowden suggested a 10-point packaging yardstick for variety stores:

1. Does illustration of the product, either in its "natural" or "ready-to-use" state, show up to maximum possible advantage?
2. Does package fully utilize all six surfaces on which to do a complete, informative selling job?
3. Does package play up important features by answering customer's unspoken questions such as: What is it made of? How it is used? Why should customers buy it? How much is it? What will it do for the customer? Why is it better?
4. Does package stand out from its competition in mass or shelf display? Package sizes, color combinations and pleasing layout are important factors.
5. Is brand identity strong so that package can be quickly identified?
6. Does package imply: "This is a quality product"? Remember, the quality of the product is reflected in the quality of the package itself.
7. Is retailer acceptance of package high? Important considerations: correct location of price spot; easy to arrange and to stock in shelf or mass displays.
8. Does package adequately protect the product? Make for longer counter life? Keep low the amount of goods returned?
9. Are directions for product explained by the employment of simple copy and illustrations?
10. Is package convenient for consumer needs?

Packaging to Cushion, Preserve and Protect

Chairman, C. W. EVANS, *Superintendent, Parts & Accessories Division, Studebaker Corp., South Bend, Ind.*

Automatic Plastic Coating for Parts. JOHN S. SAYLOR, *Parts Packaging Engineer, Buick Motor Division, General Motors Corp., Flint, Mich.*—(Mr. Saylor's remarks are reported in the story "Plastic Skin for Parts," which appears on page 100 of this issue.)

Greater Safety With Less Weight. M. W. BARNELL, *Assistant Chief Inspector, National Cash Register Co., Dayton, Ohio*—The use of bonded-rubber shock mounts and wirebound boxes at NCR is presently limited to packing one type of accounting machine which contains about 17,000 parts and weighs approximately 250 lbs. without the carriage, which is packed separately. Drop tests utilizing a wood cradle into which the machine could be placed, with steel clamps for the base feet and four cast-iron brackets, indicated that the bases would not withstand severe shocks.

The first containers used with shock mounts were heavy nailed wood boxes which proved adequate from the protection standpoint, but were too costly. Later a wirebound box suitable for domestic and overseas shipments was designed. It passed all laboratory and shipping tests. Its substantial base, to which the shock mounts are bolted, eliminates the heavy wooden rails formerly used. Their elimination, with the lighter-weight wirebound box, brought a reduction of 134 lbs. in shipping weight. Container cost was cut from \$37.55 to \$14.95. Packing labor went from \$3.29 to \$2.92. The average saving in domestic transportation cost amounts to \$3.30 and the total saving for each new box amounts to \$26.27. Up to the present time, it has not been necessary to replace a shock mount for any cause, although some have been in use almost four years.

Thermoplastic for Antifriction Bearings. LAURENCE J. CRAIG, *General Supervisor, Shipping, Stores & Packaging, Hyatt Bearings Division, General Motors Corp., Harrison, N. J.*—For the past year we have been making tests on form packaging of antifriction bearings with cellulose acetate and, for the past three months, with cellulose acetate butyrate. Our purposes are (1) to submit reports to the Defense Department for "Long-Term Preservation" and (2) to develop a practical method of domestic packaging for the more expensive types of precision bearings. Results with formed cellulose acetate packages were consistently good. Thermoplastics also can be much more economical from a material and equipment standpoint. Preliminary results on acetate butyrate are very favorable.

The tests we have been running were brought to the attention of the Air Force, who think highly of this type of packaging. Bearings with oil and packed dry were sent to the Air Force at Mallory Air Force Base, Memphis, to be exhibited at an Air Force Show. They were also taken to Wright Field, where a test program is now being drawn up. It seems likely that Air Force acceptance and approval of this type of packaging is fairly close—and we can help make it closer.

Sample packages were taken to Washington and shown to the other Services. As a result, the Army Ordnance research and development group is setting up a test program, which will probably be conducted at Rock Island, Ill.

Foam Plastics That Revolutionize Interior Packaging

Chairman, J. D. MALCOLMSON, *Consultant, Robert Gair Co., Inc., Berkeley, Calif.*

A New Introduction to an Old Material. R. P. COURTNEY, *New Product Engineer, The Bakelite Co., New York*—Mr. Courtney described the production, characteristics and packaging applications of phenolic foam. He pointed out that articles of low density may be floated in low-density foam, which prevents them from rattling around in the container; adequate flotation and cushioning of high-density products may be attained by compression packing with low-density foam, thereby retaining the flotation and cushioning properties of the material.

In commercial practice, phosphoric acid is incorporated into the foaming catalyst to give the foam flame-resistant properties. Phenolic foam weighs only about one-tenth as much as other common dunnage materials and may be made in colors at slight additional cost. Among the products for which it has been used as a cushioning agent are cut flowers, glassware, delicate mechanisms and pharmaceuticals.

Expanded Polystyrene in the Packaging Field. DONAL F. REDMAN, *Plastics Development Engineer, Plastics Technical Service, The Dow Chemical Co., Midland, Mich.*—Expanded polystyrene is meeting favorable acceptance by more and more large companies for the protection of fragile products. The material combines protection and display properties which are important when the package is placed on the counter for sale. Non-toxic and non-corrosive, expanded polystyrene may be used in direct

contact with all metals, glass, plastics and even food products. Its low thermal conductivity makes it an excellent low-temperature insulating material. It is also an excellent water and vapor barrier and absorbs negligible amounts of water due to its closed cell structure. Ease of fabrication is another feature.

Expanded polystyrene platforms can save as much as 20% in cost per package in comparison with glued-in compartments. It is being widely used for protecting fragile drug products, electronic assemblies and similar easily damaged products.

Expandable Polystyrene. E. A. EDBERG, *Manager, Dylite Expandable Polystyrene, Koppers Co., Inc., New York*—Although an expanded polystyrene has been available for many years, it has only recently been possible, with the advent of expandable polystyrene, to prepare foams molded to intricate shapes at controlled densities. Extrusion of Dylite expandable polystyrene into low-density foam produces flat sheets, rods, pipe coverings, "L" sections, etc. In addition to toughness, the foams are resilient and resist vibration. Density can be precisely controlled to obtain desired strength characteristics.

The presence of a high-density skin on molded articles enhances the foam's mechanical strength. Insulated chests for shipping whole blood, plasma and perishable drugs are easily molded of this material in one piece, without joints, thus eliminating the cutting, fabricating and gluing necessary with block insulation.

Delicate parts such as ceramic heating elements may be protected during shipment by a foam cap molded to the socket dimension, into which the tube prongs are imbedded. Lightweight, but strong and tough cartons are possible using polystyrene foam as a core and thin-gauge metal or plastic faces.

Vinyl Foam and Sponge for Cushioning, Insulation and Flotation. W. D. LAHEY, *Manager, Extrusive and Molding Materials, B. F. Goodrich Chemical Co., Cleveland, Ohio*—By our definition, "foam" vinyl is a material made by forming pockets or cells in the plastisol prior to fusion, while "sponge" is made by forming pockets or cells in the plastisol during the fusion process. Both materials can be used to mold shapes, or cast continuously into strips or sheets. Hardness and rigidity can be varied from very soft to very stiff. Vinyl foams and sponges have a number of outstanding properties making them particularly suitable for cushioning applications, including a great ability to absorb and distribute shock and vibration, durability to absorb repeated shock without deterioration and maximum protection for minimum weight. In addition, they do not chafe or dust, are non-corrosive by nature, non-absorbent and fungusproof, chemical resistant, flame resistant, puncture and wear resistant, and withstand weathering. They can be had in any color and can be easily fabricated or formed into shape.

Urethane Foams: Potential Packaging Materials. G. G. STIER, *Assistant Vice President, Nopco Chemical Co., Inc., Harrison, N. J.*—As yet, no real volume of urethane foams has been produced in this country, although a number of producers have very active development programs. As this year unfolds, and certainly by early 1956, a wide variety of types should be available. Probably of greatest interest are the elastomeric or flexible foams.

Although the urethane foams become stiffer at low temperatures, they are not brittle even at minus 75 deg. F. The tensile strength of flexible urethane foam does not vary significantly with density in the range of 2 to 5 lbs. per cubic foot. The urethane foams broadly will have excellent resistance to moisture, salt water, salt solutions, synthetic detergents, boiling water and steam, and moderate resistance to dilute acids and alkalis.

A good part of what has been done initially with urethane foams as packaging materials has been with pour-in-place systems. In our own case, practically all of our work has been concerned with the development of containers for use where thermal insulation, light weight, resistance to vibration and

impact, and resistance to moisture are needed. Development work has also been carried out with the flexible foams for complete cushioning or flotation of delicate instruments. The flexible foam may be cast in almost any configuration necessary for flotation.

WEDNESDAY AFTERNOON

Films.

Chairman, JOHN A. WARREN, Technical Adviser, American Management Assn., New York.

Acetate. D. S. HOPPING, *Product Director, Film Dept., Celanese Corp. of America, Newark, N. J.*—As a transparent wrapping film, acetate's unusual physical properties make it especially ideal for two contrasting types of products. At the very short term or rapid turnover end of the packaging scale is produce pre-packaging. Acetate's gas and water-vapor transmission qualities reduce mold-producing concentrations of moisture and aid in the elimination of flavor-destroying gases inside the wrap. The ability of acetate to "breathe" through its entire surface means that fresh foods can have the sanitary protection of a completely sealed wrap without holes, vents or perforations.

Acetate is ideal for most pre-packaging because it is non-fogging, permits natural ripening, is waterproof and greaseproof, is crisp, dry, crystal clear, is wrinkle free, retards development of mold and slime, protects against souring and off flavors, is odorless, tasteless and non-toxic.

At the other end of the packaging scale—as a wrap for long shelf life, slow-moving products and those that must be packed months before they are sold—acetate also fills a long-felt want.

Acetate sheeting, most economically and ideally suited for vacuum forming, continues to pioneer this field. Products packed in transparent vacuum-formed packages range from heavy bearings sealed in oil, to tools and hardware items, to cosmetics and even pills.

Cellophane. F. W. SPANNAGEL, *Market Development, Sylvania Division, American Viscose Corp., Philadelphia, Pa.*—The cellophane industry has been estimated to have a combined total production of about 350 million pounds per year.

Cellophane is an economical film with excellent performance on high-speed machines. In fact, much automatic packaging equipment and many automatic and semi-automatic wrapping machines were originally designed for operation with cellophane. Its heat-sealing range offers considerable latitude; its sealing requirements are non-critical. Sealing ranges are between approximately 200 and 300 deg. F., though far higher sealing temperatures are used in operation on high-speed equipment or where multiple folds are to be sealed. In sealing cellophane by heat three factors have to be considered: temperature, dwell time and pressure. Many of its types will heat seal; all can be either adhesive or solvent sealed.

Polyethylene. H. C. CHILDS, *Polyethylene Product Manager, Olin-Mathieson Chemical Corp., New York*—Polyethylene is well on its way to being the chemical industry's first billion-pound-per-year plastic.

Polyethylene gives good product protection because it is tough, flexible, moistureproof, tasteless, odorless, non-toxic and a chemically inert material. High elongation or stretchability before break, although it is not one of the higher tensile strength films, gives it toughness. High stretchability also militates against tear propagation and resists tearing.

The film is completely inert to the action of most foods and chemicals. It is practically insoluble in all known solvents at or near room temperature. Scuff resistance, greaseproofness and odorproofness are not among polyethylene's good characteristics. Because polyethylene is a petroleum product exhibiting the characteristics of petroleum products, it has an affinity for greases and oils that come in contact with its surface.

In general, the machineability characteristics of polyethylene film are only fair and there is a great deal of room for improvement. Recently, additives producing better surface slips have improved polyethylene's machineability characteristics.

Polyethylene can be successfully laminated to cellophane and other similar films by the use of pressure-sensitive or heat-sensitive adhesives. Polyethylene can also be hot-melt extruded upon films such as cellophane with satisfactory results.

Saran and Polystyrene. F. C. DULMAGE, *Head, Film Section, The Dow Chemical Co., Midland, Mich.*—Saran is the generic name for a family of plastic materials or resins based on vinylidene chloride polymers. Saran film is produced by the extrusion process. In this process the orientation takes place by changing the tube-like amorphous material as it is extruded into a thin-walled tube by blowing. This multi-directional orientation produces strong, flexible films in gauges ranging from 0.0005 in. to 0.002 in. in thickness.

Temperatures up to 300 deg. F. and higher can be tolerated for several minutes in a wet atmosphere, such as an autoclave. In fact, it is not uncommon to process foods in saran at temperatures well in excess of 212 deg. F. for an hour or two. This opens some new possibilities for flexible film packaging.

The strength of saran film is very high. Tensile strengths of 10,000 to 15,000 lbs. are not unusual. Saran's great strength comes about through the orientation given it.

Saran's ability to contain or exclude gases is most remarkable. This is a must for vacuum and gas packaging. It is also important for the packaging of processed meats or for similar applications wherein the exclusion of air is highly desirable. This is a disadvantage for the packaging of fresh meats, unless they are to be frozen. If frozen, the absence of oxygen is an advantage, too.

There are two types of polystyrene film or sheet—one type is biaxially oriented film, the other is the unoriented high-impact extruded sheet that is offered by a large number of manufacturers. The oriented film is very clear and colorless, while the high-impact sheet is usually translucent to opaque.

The moisture transmission rate of oriented polystyrene is quite high, as is its gas transmission. Polystyrene is not subject to moisture absorption, thus it is dimensionally stable and will not buckle, warp or swell due to moisture pick-up. Being void of plasticizers, it will not dry out or change in flexibility on aging. Its clarity and sparkle are amazing.

Polystyrene film's high gas permeability rate immediately suggests its use for fresh meat and vegetable packaging. Limited tests indicate polystyrene film may be an excellent fresh-meat wrap and also a good packaging medium for fresh fruits and vegetables. However, some problems do exist in the mechanical fabrication of bags from polystyrene film.

Pliofilm and Vinyl. F. H. KIMBALL, *Manager of Sales Development, The Goodyear Tire & Rubber Co., Akron, Ohio*—Pliofilm is a plasticized and stabilized rubber hydrochloride that is cast from a solvent solution in a flat sheet to produce a transparent, homogenous film. There are 12 basic types of Pliofilm available in eight different grades. Dimensional stability is excellent in all types of Pliofilm. Heat seals are welded film-to-film seals. Resistance to oils and greases is excellent. Water absorption is zero in any type. The types of Pliofilm can be easily grouped in three categories: (1) N Type; (2) P Type and (3) F, H and M types of Pliofilm. The N Type film is formulated to provide the "tightest" film. The P Types are tougher and more flexible, but WVTR and gas diffusion rates are not so low. F, H and M types are heavy-duty, special-property films.

Vinyl resin can be cast, calendered or extruded into film or can be used as a coating. The oldest, most common method of producing polyvinyl chloride in free film form for packaging is casting.

Casting vinyl film provides a means of producing a lighter-gauge film with greater clarity than can be achieved in calen-

dering, which is the common method used to produce vinyl film for the fabricating field. In addition to excellent clarity, cast vinyl also possesses a relatively low WVTR, excellent tensile strength, good heat-sealing properties, good resistance to chemicals and oil, fair resistance to sunlight and excellent dimensional stability. In cast vinyls, as in Pliofilm, the quantity and type of plasticizers, as well as the finished gauge, have a direct bearing on the properties of any given type.

The other method of producing polyvinyl chloride film is calendering or extruding. There is no flexible, calendered vinyl film being used as packaging film, to the best of my knowledge, but extruded is rapidly becoming a factor. Generally, extruded vinyl's greatest claim to fame is its excellent resistance to sunlight and aging on all gauges and types.

Polyester Film.* DANIEL D. LANNING, *Manager, Sales Development & Technical Services, E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.*—On-the-market packages employing polyester film now include macaroni, curtains and doll furniture in window cartons; a series of plastic cake ornaments; and a cordial bottle. Many of these products, textiles, toys, hardware, are slow-turnover items which have a long shelf life. They require a packaging material like polyester film—highly durable, sparkling in appearance, that will not deteriorate with age.

In addition, the durability of this polyester film solves many shipping problems, for there is little danger of broken or torn film. Shipping cartons containing products packaged in the film can be stacked away until needed. There's no danger of the film drying out or becoming embrittled.

The film's durability and resistance to oil and grease over a wide range of temperatures also suggest possible packaging applications in the field of laminations to paper and fibreboard. The film may be bonded to fibreboard and metal, to tubes or to other types of containers for either consumer or bulk packaging of oily or greasy products. This includes shortenings, medicinals, lubricants, etc. Similar types of containers can be used by the chemical industry, since polyester film is highly resistant to many acids and alkalis.

Although this new film shows promise for many packaging applications, heat sealing is still a problem. The film cannot be heat sealed with the conventional techniques used on other films. It can only be sealed with a hot wire, with flame-sealing equipment, or bonded with adhesives.

Know Your Materials: Foils, Paper, Paperboard

Chairman, E. H. BALKEMA, General Purchasing Agent, Colgate-Palmolive Co., Jersey City, N. J.

Aluminum Foils. NICHOLAS A. COOKE, *Foil Technical Sales Representative, Kaiser Aluminum & Chemical Sales, Inc., Oakland, Calif., representing Foil Division of the Aluminum Assn.*—Today there are nine producers of aluminum foil in the U. S. From 1950 to 1954, foil production has increased from 100 million to 150 million pounds, an increase of 50%. Moreover, the production in one year from 1953 to 1954 has increased from 113 million pounds to 150 million pounds, an increase of 33%. Three quarters of all the foil produced in this country is used in some form associated with packaging. Aluminum foil fits into practically all of the operations practiced by the packaging industry; it can be laminated, printed, glued, lacquered, coated, colored, embossed, slit, sheeted and, in the heavier gauges, stamped or formed. In laminating, combinations can be made with foil and all other packaging materials including paper, paperboard, fabrics, cellophane, cellulose acetate, polyethylene, vinyl films, polyvinylidene chloride films, polyesters and rubber hydrochloride. Decorative, protective and heat-seal coatings are easily applied to foil on conventional equipment and printing can be done by all of the commercial methods—gravure, flexographic, letterpress, offset lithography and silk screen. Foil is safe with foods, being entirely

* DuPont's trade name for polyester film is "Mylar."

non-toxic. No taste or odor is imparted by aluminum foil. Having no volatile ingredients, it will not dry out under constant exposure to elevated temperatures or after being stored in low humidity areas. It is capable of standing extreme temperature changes ranging from minus 100 to 700 deg. F. Being a metal, aluminum foil has no true water-vapor permeability rate. Whatever transmission does take place is through microscopic discontinuities in the foil. Foil 0.0015 in. and thicker is conceded to have zero water-vapor permeability. Foil is greaseproof, oilproof and offers protection against the harmful action of light for products such as potato chips, bacon, butter, etc. In the heavier gauges, foil offers a complete barrier to the passage of gases. The property of gas resistance will prevent the loss of aroma and flavor from highly aromatic products such as tobacco, cheese, chocolate, cookies and tea. Physically, thin foil has a fairly low tear strength. In many cases this can be remedied by combining it with other materials. Chemically, foil is attacked by alkalis and certain strong acids. It is standard procedure in many applications to prevent such action through use of thin organic coatings.

Functional Properties of Glassine and Greaseproof Papers.

M. L. DOWNS, *Technical Director, Thilmany Pulp & Paper Co., Kaukauna, Wis.*—Greaseproof paper, a grade in itself, is sold under that designation for the packaging of many greasy and oily foods. It is a sheet material unlike paper insofar as it is non-porous, extremely dense, translucent if not opaqued, and quite resistant to the wicking and penetration of greases, oils and waxes. When greaseproof is further processed at high moisture content, temperature and pressure in roll form over a special multiroll super-calender stack, it becomes "glassine," available in either transparent or in opaqued grades of brilliant white. Glassine makes an ideal base for waxing, wax laminating, lacquering and coating. It prints excellently, embosses with fine detail, accepts adhesives easily and handles economically on standard converting and packaging machines. Plain transparent amber or bleached glassines are at least two to three times as economical as the nearest competitive transparent films and those grades such as waxed or wax laminated bleached or amber glassines are 1½ to two times as economical as the nearest competitive water-vapor-resistant transparent films. In packaging applications calling primarily for grease resistance alone, unconverted greaseproof is the most economical material. Because of its dense nature, it is used to provide aroma protection, scuff resistance, protection from air, dust and bacteria infiltration and, in opaqued grades, protection from ultraviolet and ordinary light. Unconverted greaseproof as a basic grade is also available with a number of other treatments and variations. One of its major uses is as a combining material by board and box fabricators. Glassine as such has very little water-vapor resistance and is not heat sealable; so for many uses it is converted into wax laminated, wax coated, solvent coated or hot-melt coated, and also frequently combined with other materials such as foil and polyethylene.

Packaging Papers (Coated Labels). R. I. DRAKE, *Technical Adviser, General Sales Dept., Champion Paper & Fibre Co., Hamilton, Ohio*—We can classify packaging papers into three broad classes—identifying, protecting and decorating. Examples of the identifying papers include labels, bottle labels, loose wraps and bag tops, ranging from plain, uncoated, machine finished or English finished paper to the finest coated-one-side or coated-two-sides papers. Coated-one-side litho is the most popular of all label papers. The can-label field uses the greatest tonnage of this grade and it is also used extensively for bottle labels. When used for loose wraps, the same sheet will suffice, but should the requirement be for tight wraps, then entirely different requirements apply, of which strength is probably the most important. Paralleling this is that of the soaking label in which the labels or wraps are soaked in paste for a considerable period prior to application. Here high shrinkage strength and good wet strength are required. A

newer and more radical method of coating now gaining favor is cast coating. This method produces a superior printing paper, with better whiteness and higher gloss than can be secured from the conventional coated papers. In most instances varnishing or otherwise surface coating is dispensed with. Sometimes coated-two-side papers are used in the packaging industry, particularly for bag tops.

Paperboard. GLENN T. RENEGAR, *Mill Manager, Container Corp. of America, Manayunk, Philadelphia, Pa.*—From the time a sheet of paperboard leaves the paper mill until it reaches the home in the form of folding cartons containing merchandise, it must assume and perform several functions. Functional properties can best be described by the end use to which the board will be subjected. Because of limited storage areas and costs of new construction, palletizing and stacking of finished goods are necessary; thus, stacking strength becomes a very important factor in cartons. Self-service merchandising requires cartons that will withstand rough and excessive handling. Due to limited shelf area, greater standardization of packages will become necessary. This will result in different, and perhaps additional, functional properties being built into a sheet of boxboard for the making of folding cartons.

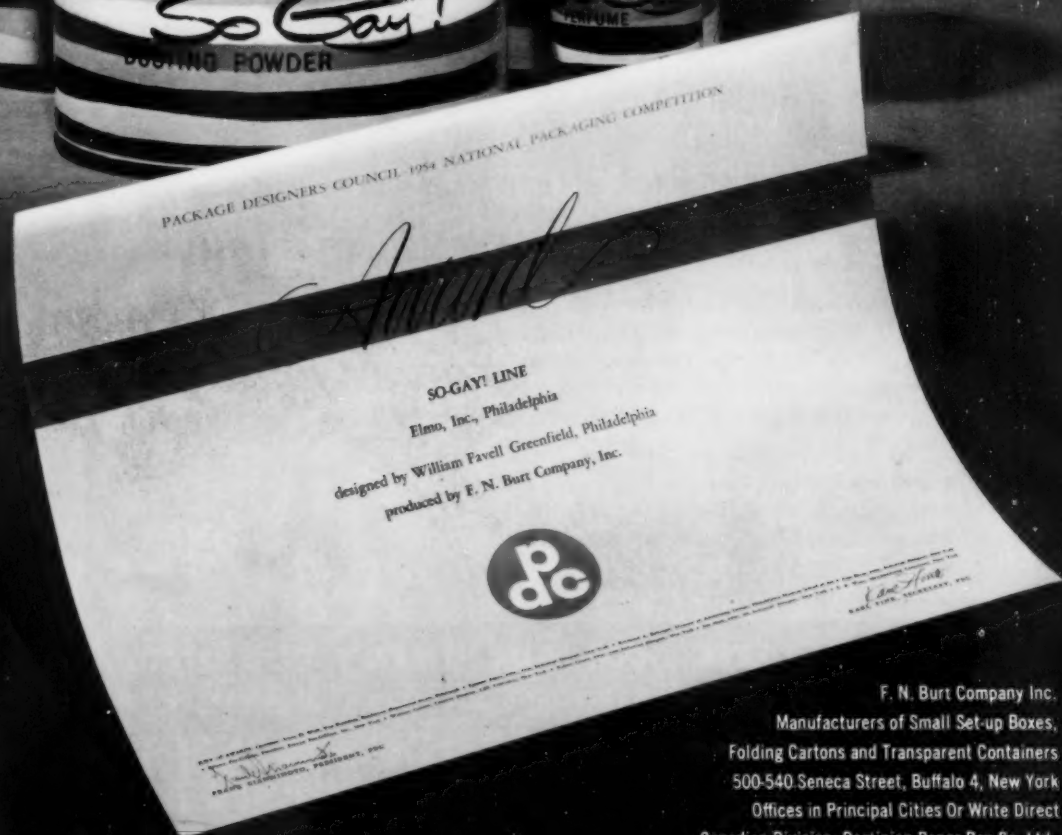
In addition, we cannot forget that folding cartons must be a precision product if they are to work satisfactorily on high-speed packaging equipment. Therefore, board specifications must be very carefully studied and analyzed.

Total paperboard production last year in the U. S. was approximately 12,046,923 tons, made up of 2,484,725 tons of folding boxboard, 941,635 tons of special food boards, 710,302 tons of set-up boxboard, 209,762 tons of non-bending boards and 245,424 tons of other special bending boards. (Specific types of folding carton paperboards discussed by the speaker included chipboard, solid newsboard, plain bending chipboards, mist boards, single manila, bleached manila, white patent coated, extra strength boxboards and clay-coated boards.)

Paperboard. J. J. AID, *Assistant Research Director, Robert Gair Co., Inc., Uncasville, Conn.*—Many grades of paperboard are obtained directly off the machine; others are given the desired qualities by supplementary "off-machine" operations. Too frequently, products are either under- or over-protected because of improper board selection. In order to avoid mistakes, the advice of an experienced packaging engineer is recommended, with a careful study of printing requirements, storage, required shelf life of the product and other factors.

Many specialized types of boards are available to meet specific requirements. Lamination or coating may be used to obtain grease resistance. Foil laminates, usually with the foil on the inside surface of the package for function or outside for appearance, are widely used for frozen products and baked goods. Polyethylene-coated boxboard is a relatively new material which will probably enjoy increasing adoption; however, it should not be considered a "cure-all" for all packaging problems, although it offers a unique combination of many desirable properties. "Stabilized" board is board that has been chemically treated to retard development of rancidity. It is especially desirable for certain food products where a long shelf life is required. Anti-tarnish board will not promote tarnishing of products packaged in it, but cannot prevent tarnishing which may be caused by other factors. VCI board is capable of retarding corrosion of ferrous materials. Insect-repellent board is undergoing much research; toxicity factors are among those which require further study. Sterilizing board is a white-lined board designed to maintain whiteness after steam sterilization. Mold-resistant board will not of itself contribute to mold growth, but cannot check mold growth arising from other factors. Close cooperation between the boxboard industry and the chemical field will make new progress possible in special-purpose boards. Users should make their needs known and keep their purchasing agents informed of new developments in the paperboard field.

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*1954 Folding Carton Competition
Award of Merit
Textile—Wearing Apparel—to Ace Carton Corporation
for A. Stein & Company*



too tough to mass-produce?

It's being done on the Brightwood

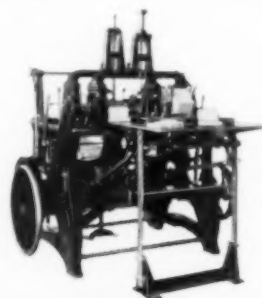
This award-winning frame wall box displays a belt to good advantage... gives it "gift" appeal... makes it easier to sell.

Usually, boxes like this are hand-made. However, U. S. Automatic Box Machinery Co., Inc., worked with A. Stein & Company, makers of Paris belts, to produce this type of box on the Brightwood at the rate of 55 to 60 per minute!

The initial blank is pre-glued and specially scored as illustrated. Then, the Brightwood takes over gluing, breaking, forming — producing the finished boxes. What's more, two different sizes

of boxes are formed with minimum change-over.

If you are interested in producing boxes that help make sales — investigate the Brightwood. Write **US**—today.



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New York 17, N. Y.

Ever tackle a food package this big and awkward? Refrigeration alone isn't enough. When meat loses its natural moisture, it loses color and freshness. Even a whole carcass shrinks in storage and transportation.

That's the reason for this new wrapping—cotton fabric covered with a coating based on BAKELITE Brand Vinyl Resins. Moisture stays in, meat stays fresh. Since beef, veal, and lamb lose moisture at different rates, the wrappers

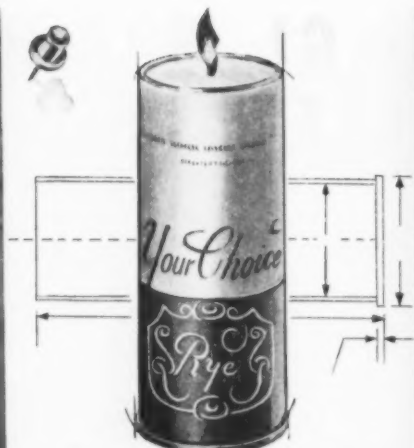
for each have different porosities. These wrappers are easily put on with a special sewing tool. One replaces two formerly needed when conventional materials were used. They can be printed with attractive designs and trade-marks.

Big or small — your packaging may get similar benefits from a coating based on BAKELITE Vinyl Resins. Paper, metal, foil, or cloth can be improved. Write Dept. BW-105.

Vinyl, Polyethylene, Polystyrene, Phenolic and Epoxy Resins for Packaging



BAKELITE COMPANY, A Division of Union Carbide and Carbon Corporation **UCC** 30 East 42nd Street, New York 17, N. Y.
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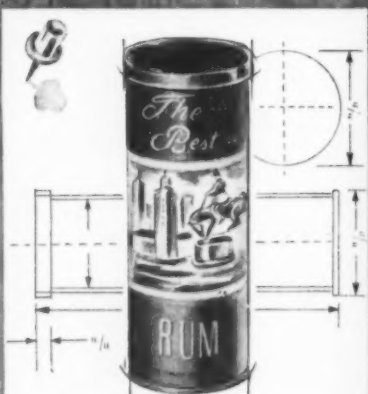
Christmas "Candle" can light the way to soaring holiday sales. A sure fire package for national promotion... It also provides product identity in the competitive holiday scramble.

Spirited Ideas for GIFT PACKAGING

There's a new look and a new sales lift on the liquor holiday horizon... in these imaginative packaging ideas by Harcord.

Versatile paper canisters offer rigid protection and add an expensive look to your liquor package... so different from conventional gift cartons.

Canister packaging ideas are unlimited, as are display possibilities. And Harcord turns paper canisters into sales builders at an unbelievably low price.



Colorful eye-catching packages are easily created from Harcord paper canisters... give a real lift to the liquor gift.



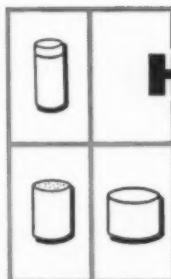
Brick "Chimneys" in store windows attract potential Santa Clauses... provide a made-to-order holiday display that can turn passers-by into buyers!

You Sell It Better...

**because You Say It Best with
PAPER CANISTERS by**

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SALES OF "#152 GLASPUN" SEALING TAPE RISE STEADILY

NATIONAL FORECAST:
Clear Weather Ahead For All
Distributors and Users of
#152 Glaspun Sealing Tape

VOL. # 152

NO. 152

Stocker

MANUFACTURING CO.
NETCONG, N. J.

EXTRA

MARCH, 1955

RULE 41 CHANGED



Tests by Container Laboratories, Inc., prove No. 152 Glaspun superior to all other closure methods.

The following is a direct quotation of Container Laboratories, Inc. Project Report No. 8678: "Results indicate that, in all phases of the project, boxes closed by application of one strip of Glaspun tape over the top flaps and one strip over the bottom flaps performed better than corresponding boxes with one or more closure methods currently authorized, etc."

Revolutionary New Method of Reinforcing — Best Quality Gumming

Our modern patented machines using glass fiber as the reinforcing agent produce a uniform reinforcement in both the cross and lengthwise directions. Bi-directional reinforcement is of prime necessity for proper sealing using the two-strip method of closure because the tape must resist the bi-directional strain to which a corrugated box is subjected. Made with #1 high test glue formula; the sealing properties of #152 Glaspun are the best available.

Text of Change Allowing Use of No. 152 GLASPUN Two Strip Sealing Method

"Rule 41, Section 7, Sup. 14, UFC 2 and Sup. 34, CFC 20 has been amended to include a new paragraph as follows:

SECTION 7—

1 to 5 — Not involved.

Paragraph 6 — When tape conforming to the following specifications is used, center seam only need be sealed. Tape must be not less than 3 inches wide and must extend over the ends not less than 2½ inches.

Tape must be made of two sheets of 100% sulphate kraft each not less than 30 lbs. basis weight, reinforced with glass, sisal or rayon fibre, combined with a laminant of asphalt or other material not affected by temperature extremes any more than would standard 180° to 200° softening point asphalt.

Tape must be reinforced by lengthwise fibres spaced not more than an average of ½ inch apart, and by crosswise fibres spaced not less than an average of 2 per inch except that when a diamond pattern is employed for crosswise reinforcement the spacing between the parallel sides of the diamond measured in the machine direction must be not more than 1 inch.

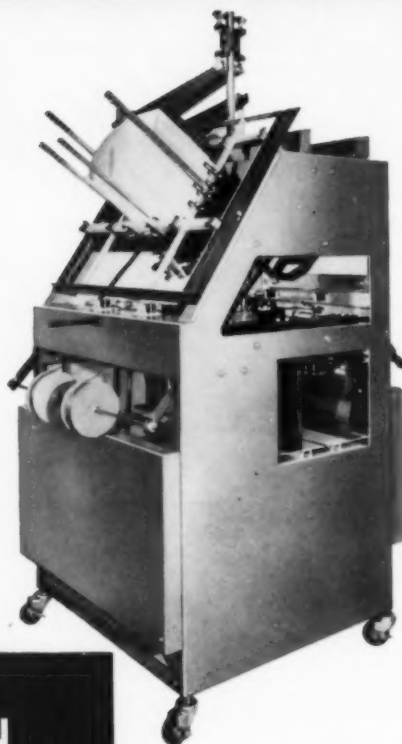
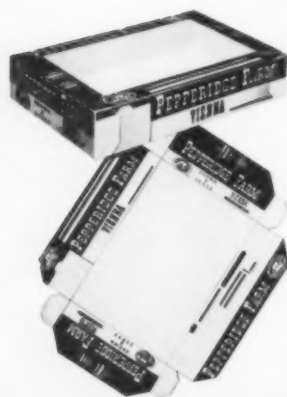
Glass or sisal reinforced tape must have minimum tensile strength in the machine direction of 75 lbs. per inch of width and a minimum tensile strength in the cross direction of 45 lbs. per inch of width; rayon reinforced tape must have a minimum tensile strength in the machine direction of 57 lbs. per inch of width and a minimum tensile strength in the cross direction of 27 lbs. per inch of width with elongation not exceeding 15%. Tensile tests on the finished product shall be made on a 3 inch width sample.

New Sealing Method Saves Shipping Room Labor Costs Up to 75%

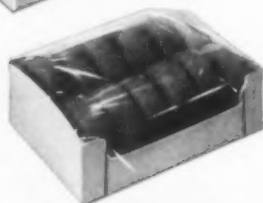
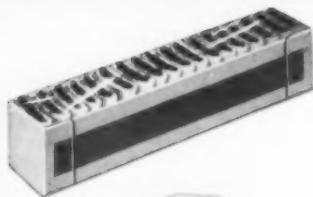


Every plant manager and shipping room foreman wants to cut down costs—a dream come true is #152 Glaspun Sealing Tape. By using the two-strip method with Glaspun, one man can do the job of three or four. No need to miter the corners using six strips of tape. Just one strip on the top, one on the bottom and the carton is ready. The recipient of your merchandise will thank you for switching to #152 Glaspun. Not only will your cartons reach him in better condition but also he will find his cartons easier to open. Have you tried opening a glued or stitched box? Your difficulties and his along these lines and your complaints on damaged cartons will be ended with your turn to the modern, efficient closure—#152 Glaspun Sealing Tape. The phenomenal acceptance of this new method of sealing is your proof!

Tape must have a performance test not less than 35% greater than paper sealing tape applied in accordance with paragraph 3 of Section 7, when applied to 275 lb. test box 24 x 12 x 12 inches loaded with filled No. 2 cans to gross weight of 90 lbs. and tested in a standard 7 foot revolving drum."



**GREATEST ADVANCE IN
CARTON GLUING TO DATE!**
Only The New TL100 Carton Former Has It!



Now you can produce strong, thermo-glued trays and hinge-cover cartons for your bakery products without muss or fuss! The TL100 uses a rope-type thermoplastic adhesive which is automatically metered, melted and applied to the carton. No glue pots and glue lines to watch and clean! You can stop carton production at night, then begin again the next day at the flip of a switch.

The TL100 requires only 3' x 3' of floor space, but produces up to 100 trays or hinge-cover cartons a minute. Only the simplest, most inexpensive die-cut blanks are required. The four hinged flaps are sealed to the outside of the side walls—tray interior has smooth, unbroken inner surfaces. Practically any stock may be used, including polyethylene coated board. Maximum carton size range: 16" L x 14" W x 4" D. Minimum: 3" L x 1 7/8" W x 3/8" D.

Get all the money-saving facts about the TL100 Carton Former. Ask the nearest representative or write direct.

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Performance of paper-veneers

Tests indicate they are suitable alternates for plywood in panels of fully cleated domestic boxes. By E. H. CLARKE*

As panel material for cleated-panel boxes, plywood and fibreboard were used almost exclusively until the recent commercial advent of paper-overlaid veneers.

*This report was prepared by the Forest Products Laboratory under USAF Contract No. AF 33 (038)51-4065. The contract was initiated under Research and Development Order No. 618-11, (AB), "Improvement of Packaging Procedures," and was administered under the direction of the Materials Laboratory, Directorate of Research, Wright Air Development Center, with M. E. Bowman acting as project engineer.

By conducting more than 1,500 tests on specimens of paper-overlaid veneer and container-grade plywood along with tests of 165 containers, information was obtained that indicates a correlation exists between some of the mechanical properties of paper-overlaid veneer materials and the expected rough-handling performance of fully cleated domestic boxes using such material for panels. The results also indicate that all of the 19 different paper and veneer combinations tested, each varying from the other by differences in core, overlays or manufacturing process, are suitable alternates for 3/20-in. (Groups I and II) container-grade plywood in panel boxes. Some combinations appeared to be suitable as alternates for thicker plywood.

The Forest Products Laboratory¹ and others have investigated some overlaid veneers to determine their suitability for containers. The findings in most instances were favorable within limits as to weight of contents and container size. On the basis of these findings, a military-procurement specification² was prepared. That specification, however, is not based on material requirements of all types of paper-overlaid veneer now being manufactured.

At present, there are at least three major producers of these materials, but no Government specification covers all of them. At the request of the Packaging Branch (WCRTG), Wright Air Development Center, Wright-Patterson Air Force Base, Ohio, the Laboratory made a comparative study of several paper and veneer combinations, aimed at determining (1) their suitability for use as an alternate panel material in Federal Specification NN-B-601, "Boxes, Wood-Cleated-Plywood, For Domestic Shipment," and (2) specification requirements for container-grade paper-overlaid veneers.

The currently available paper-overlaid veneer products, because of their dissimilarity, did not appear to lend themselves readily to an all-inclusive material-requirements specification. Furthermore, it was felt that a specification of this type would not

necessarily assure that the resultant product would possess the physical and strength properties which are necessary for the adequate performance of a container.

Therefore, a specification based on performance standards of the material would seem desirable.

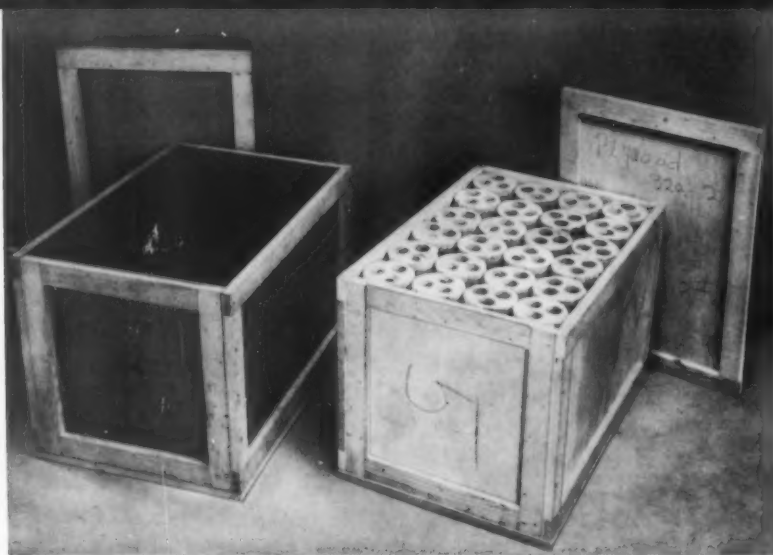
To get needed information, a research project was begun to investigate certain strength and mechanical properties of commercial paper-overlaid veneers that influence the performance of cleated-panel boxes. Also, containers made with these panel materials were tested to relate the performance of the boxes to properties of the panel materials. This involved tests of 165 boxes and more than 1,500 specimens of paper-overlaid veneer.

Tests included static bending, impact puncture resistance, nailhead pull-through, lateral nail resistance and ply separation, all but ply separation at two moisture-content levels. Performance characteristics of boxes were obtained by using the revolving-drum test and the diagonal-compression test. These tests were also made at two moisture-content levels.

Description of materials

The materials investigated were extremely dissimilar because different methods of manufacture, various thicknesses and species of veneer, and kinds and thicknesses of paper overlays were employed in their fabrica-

¹Maintained at Madison, Wis., in cooperation with the University of Wisconsin.
²MIL-V-4338, *Veneer, Paper-Overlaid*, Nov. 7, 1951.



1. REPRESENTATIVE paper-overlaid veneer cleated-panel box (left, empty) and cleated-plywood box loaded for revolving-drum test.

tion. Each of the following paper-overlaid veneer materials was supplied by the manufacturers for test purposes. Hereinafter, any specific mention of a particular paper-overlaid veneer will be by code designation A, B, C or D.

Material A. This material had a hardwood core, faced on both sides with Fourdrinier kraft paper. Three thickness of veneer, 1/16, 1/8 and 1/6 in., were used. Species of wood in the core material tested were white oak, red oak and sweetgum. Facings 0.016 in. thick and weighing 42 lbs. per 1,000 sq. ft. were applied to the wet veneer with a soybean adhesive

containing a resin additive. The grain of the veneer was positioned parallel to the length of the panel and at right angles to the machine direction of the paper. The paper was lightly coated with a wax emulsion, supposedly to improve water resistance. The combined sheet was then dried to a low moisture content. Shrinkage was reported to be much less than normal, due to restraint by the paper.

Material B. This paper-overlaid veneer product consisted of a Douglas-fir veneer core containing white pocket² and a sheet of 16-point, 40-lb.

²A condition occurring in Douglas fir where small scattered voids, or pockets, are formed by the fungus *Fomes pini*.

TABLE I—RESULTS¹ OF DIAGONALLY OPPOSITE CORNER-COMPRESSION TESTS OF WOOD-CLEATED BOXES

Nominal thickness and code of panel material (in.)	Average box weight (lbs.)	Average moisture content		Maximum load			Average compression at maximum load (in.)
		Panel (%)	Cleat (%)	High (lbs.)	Low (lbs.)	Average (lbs.)	
Boxes tested dry ²							
3/20-plywood	12.7	10.6	11.2	2,710	2,450	2,557	1.76
1/6-A	17.2	10.2	11.6	2,750	2,249	2,478	2.04
1/8-A	15.1	10.3	11.8	2,705	2,294	2,509	2.05
1/16-A	12.8	10.6	10.4	2,250	2,100	2,152	1.76
3/16-B	14.9	9.4	11.2	2,270	1,815	2,039	1.81
1/8-B	13.1	9.1	10.8	2,225	1,983	2,081	1.86
1/10-B	12.1	8.6	11.2	2,320	1,945	2,117	1.72
3/16-C	17.7	9.6	10.5	2,785	2,490	2,618	1.61
1/8-C	13.7	10.0	11.4	2,700	2,295	2,515	1.79
1/7-D1	14.0	6.9	11.8	2,480	2,175	2,382	1.88
1/7-D3	15.8	6.8	12.3	2,950	2,460	2,667	1.75
Boxes tested wet ³							
3/20-plywood	17.6	83.9	25.6	1,876	1,560	1,622	1.75
1/8-A	19.4	48.9	24.7	1,532	1,140	1,341	2.19
1/8-B	17.7	62.4	25.1	620	426	532	1.14
1/8-C	15.8	20.3	31.7	2,140	1,320	1,685	2.05
1/7-D3	17.3	7.9	28.3	2,154	1,724	1,936	1.87

¹ Average values are of five boxes.

² Boxes conditioned at 75 deg. F., 64% r.h.

³ Boxes conditioned at 75 deg. F., 64% r.h., then subjected to a 4-hr. water spray immediately prior to testing.

Fourdrinier kraft paper bonded to each face with a soya-silicate adhesive. The veneer was dried and then distended by slitting the wood parallel to the grain. The slits purportedly increase the dimensional stability of the veneer with changing moisture content. Three thicknesses of veneer, 1/10, 1/8 and 3/16 in., were used. The paper was then applied with its machine direction at right angles to the grain of the veneer.

Material C. This material consisted of a 1/16-in. hardwood core overlaid on each face with either one or two sheets of 0.030-in. untreated cylinder kraft linerboard weighing 104 lbs. per 1,000 sq. ft. One overlay on each face resulted in a 1/8-in.-thick panel, two in a 3/16-in.-thick panel. An extended hot-press, urea-formaldehyde resin was used. The grain of the core was placed perpendicular to the machine direction of the paper and the length of the panel. Woods tested included beech, birch, hard maple and soft maple.

Material D. This three-ply material had a nominal total thickness of 1/7 in. It consisted of a 1/12-in. hardwood core faced on both sides with a sheet of 0.027-in. asphalt-impregnated cylinder kraft paper. The asphalt paper weighed 145 lbs. per 1,000 sq. ft. and was bonded to the veneer with an extended hot-press, urea-formaldehyde resin. The grain of the veneer was at right angles to the machine direction of the paper. Several species, representing container wood Groups I, III and IV, were used for core stock. Code designations D1 and D3 are used in this report to denote Group I and Groups III or IV core species, respectively. The species used were basswood, beech, birch, hard maple and soft maple.

Plywood. The container-grade plywood (JAN-P-139, Type C) used to compare the performance of the several paper-overlaid veneers was nominal 3/20 and 3/16 in. thick. Three-ply cottonwood and willow, both Group I container woods, were used. The adhesive used was believed to be a protein type.

Description of boxes

All thicknesses of the various paper-overlaid veneer materials and the 3/20-in. container-grade plywood were used as panel material in cleated-panel boxes. Each box was constructed in accordance with Federal Specification NN-B-601, "Boxes, Wood-

TABLE II—RESULTS¹ OF REVOLVING-DRUM TESTS ON WOOD-CLEATED-PANEL BOXES

Nominal thickness and code of panel material (in.)	Average moisture content		Falls in drum to cause box failure		
	Panel (%)	Cleat (%)	Range		Average (No.)
			Boxes tested dry ²		
3/20-plywood	10.5	11.1	31	15	19
1/6-A	10.6	11.1	67	19	42
1/8-A	9.3	10.2	45	18	34
1/16-A	10.7	11.0	33	18	25
3/16-B	10.0	12.2	65	17	42
1/8-B	12.8	10.7	37	15	26
1/10-B	9.4	11.4	23	18	21
3/16-C	8.8	10.1	48	19	34
1/8-C	9.4	10.1	41	15	28
1/7-D1	5.6	11.5	28	15	21
1/7-D3	6.5	10.7	36	12	25
			Boxes tested wet ³		
3/20-plywood	60.5	23.0	13	5	9
1/8-A	45.1	26.3	31	6	18
1/8-B	69.9	26.5	20	7	12 ⁴
3/16-C	16.1	31.0	12	5	9
1/7-D1	7.3	29.7	16	5	9

¹ Average values are of five boxes.² Boxes conditioned at 75 deg. F., 64% r. h.³ Boxes conditioned at 75 deg. F., 64% r.h. then subjected to 4-hr. water spray immediately prior to testing.⁴ Boxes sheared into several narrow sections early in test.

Cleated-Plywood, For Domestic Shipment," Style A construction, designed for a 112-lb. load with Group I woods. Inside dimensions were 24 in. long, 16 in. wide and 16 in. deep. An automatic nailing machine was used to attach white-pine cleats to the panels with flathead, duckbill-point, clout nails of sufficient length to permit a 1/8-in. clinch. The grain direction of the veneer of the overlaid materials and the face plies of the plywood were aligned at right angles to the through cleats of the panel. Grain direction of tops and bottoms was parallel with the box length; that of sides was parallel with the box depth and that of ends was parallel with the width of the box.

Box panels were assembled by hand nailing with sixpenny cement-coated box nails (later referred to as assembly nails). For securing the top and bottom panels to the ends and sides, five nails were driven through each of the four cleats. For securing the side panels to the ends, three nails were driven through each filler cleat and one nail through each end of both through cleats. A jig was used to make the nailing pattern for each of the boxes identical.

Preparation for testing

Before test, all of the boxes were conditioned to approximately 12% moisture content. More than two-thirds of the boxes were tested at this

condition. The remainder were later given a 4-hr. water spray and tested immediately afterward. Boxes that were tested empty were completely assembled before spraying. Those loaded for test were sprayed while empty, with covers in place but not nailed.

The tare weight of each box was recorded. Loaded boxes carried 112 lbs. of wood cylinders 4 in. in length and diameter, and loaded with lead shot. This load simulated a can pack (Type II load), as shown in Fig. 1.

Loaded boxes were closed by nailing the tops in position with sixpenny cement-coated box nails driven through the cleats and panel material of the top into the adjacent cleats of the sides and ends.

Methods of testing

Boxes were tested by either the revolving-drum test or the corner-to-corner compression test. Five replicate boxes of each available panel material were tested by each method. Immediately after test, specimens were cut from the container for moisture-content determination by the oven-dry method.

Compression test. A universal testing machine was used for the compression tests. Empty boxes were positioned in the machine so as to apply load on two diagonally opposite box corners. Load rate was 0.4 in. per min. to failure. Load-deformation data and

kinds of failure were noted during testing. An autographic recording device plotted a load-deformation curve for each box.

Drum test. The 14-ft. revolving drum was used for these tests. Hazards and guides on the inner faces of this hexagonal drum caused the loaded box to slide, tumble and fall as in rough handling, while the drum revolved at a rate of one revolution per minute. One revolution of the drum constituted six falls. Box damage and number of falls were recorded. The box was considered to have failed when any of its contents could be easily removed or had spilled.

Small test specimens of the paper-overlaid veneers and of both thicknesses of plywood were prepared and were conditioned at either 75 deg. F. and 64% r.h. or 80 deg. F. and 97% r.h. and then tested for: (1) impact-puncture resistance, (2) static bending, (3) lateral nail resistance or (4) nailhead pull-through. Six specimens were prepared for each test and for each conditioning treatment. For puncture resistance and static bending, specimens were tested two ways: with the grain of the veneer core parallel or perpendicular to their length. For the ply-separation test, 10 specimens of each material were tested without conditioning.

Specimens were checked for moisture content by the oven-dry method immediately after test. The tests were

2. IMPACT PUNCTURE test, showing pyramidal head of test equipment in advanced position after puncturing a test specimen.

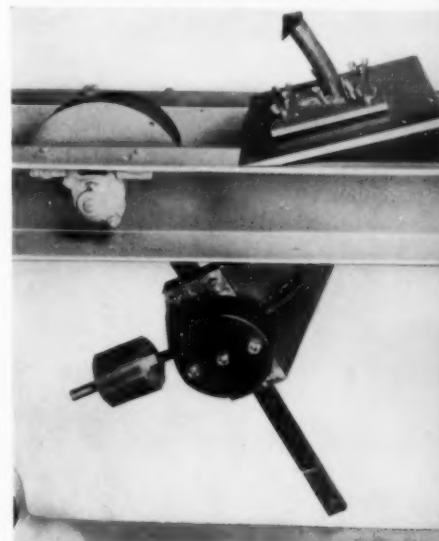
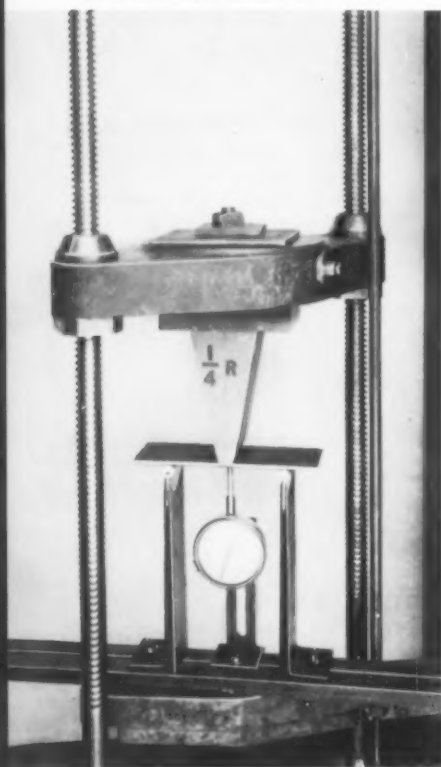


TABLE III—RESULTS¹ OF IMPACT PUNCTURE TEST ON SEVERAL PAPER-OVERLAID VENEER COMBINATIONS AND CONTAINER-GRADE PLYWOOD

Nominal thickness and code of material (in.)	Species of core	Conditioned at 75 deg. F., 64% r.h.					Conditioned at 80 deg. F., 97% r.h.				
		Average actual caliper (in.)	Average moisture content (%)	Impact puncture resistance			Average actual caliper (in.)	Average moisture content (%)	Impact puncture resistance		
				High (in.-lb.)	Low (in.-lb.)	Average (in.-lb.)			High (in.-lb.)	Low (in.-lb.)	Average (in.-lb.)
3/16 plywood ²	Group I	0.176	10.9	346	189	250	0.182	34.2	332	152	258
3/20 plywood ²	do	.144	11.9	232	138	175	.147	31.4	125	82	100
1/6-A	Red oak	.190	9.6	408	221	285	.200	28.8	388	320	363
1/6-A	Sweetgum	.186	10.2	327	260	278	.198	28.8	410	358	391
1/8-A	Red oak	.149	9.7	272	217	240	.157	26.4	398	257	340
1/8-A	Sweetgum	.159	9.8	358	275	328	.164	27.2	419	400	406
1/16-A	Red oak	.091	9.8	180	141	167	.098	31.0	230	208	220
1/16-A	Sweetgum	.085	9.2	128	111	119	.095	26.3	190	175	183
3/16-B	Douglas fir	.206	9.8	367	232	310	.219	22.3	386	214	328
3/16-B	Douglas fir ³	.206	10.2	290	199	236	.209	24.9	250	208	228
1/8-B	Douglas fir	.147	9.4	240	176	208	.160	23.7	236	134	187
1/8-B	Douglas fir ³	.150	9.0	257	153	198	.155	22.6	370	344	359
1/10-B	Douglas fir	.120	9.2	231	201	215	.133	28.6	158	101	126
1/10-B	Douglas fir ³	.117	8.9	251	162	199	.134	25.6	230	135	202
3/16-C	Birch	.178	9.9	389	357	371	.202	23.7	564	532	551
3/16-C	Soft maple	.179	9.8	384	362	377	.202	22.3	568	562	566
1/8-C	Birch	.120	10.4	292	218	262	.130	25.3	295	258	280
1/8-C	Soft maple	.119	10.6	258	217	242	.130	23.0	301	277	288
1/7-D1	Basswood	.133	6.9	184	132	155	.143	15.8	236	204	220
1/7-D3	Birch	.140	7.3	328	259	280	.147	17.8	358	313	337
1/7-D3	Soft maple	.140	7.1	237	201	220	.146	15.3	292	250	269

¹ Average values are of six specimens.² Specimens showed signs of delamination when puncture tested at 80 deg. F., 97% r.h.³ Heavy white-pocket veneer core.

3. STATIC BENDING test. Specimen is in position with the dial gauge in place for measuring deflection at intervals of predetermined loading.



conducted in accordance with the following methods:

Impact puncture-resistance test. Puncture tests were made on 6-by-6-in. specimens. The test was patterned after a commercial puncture tester that lacked sufficient capacity for some of the overlaid veneers. The adaptation consisted of fitting the triangular steel pyramidal puncture head (whose apex is the corner of a cube and whose base is an equilateral triangle) to the weighted impact-pendulum bar of the Forest Products Laboratory toughness machine (large capacity). Thus, the angular movement of the bar measured the energy used in rupturing the specimen, which was clamped between two steel plates fitted to the frame of the testing machine (Fig. 2).

Before test, thickness of specimens was measured at the center of the face with a micrometer.

Static-bending test. This test determined stiffness of the materials. All specimens were 2 in. wide and tested over a span 24 times⁴ the depth (thickness) of the specimen, figured to the nearest 1/4 in. Specimens were 2 in. longer than the span, thus permitting

a 1-in. overhang at each end support. One half of the specimens were prepared with the grain direction of the core parallel and one half with the grain perpendicular to the span. Thickness was measured at the center of the specimen before test.

The specimens were loaded at a machine speed of 0.1 to 0.2 in. per minute. Deflection was measured with a dial gauge (Fig. 3).

Load and deflection data were used to calculate stiffness (D) with the following formula:

$$D = \frac{P \times L^3}{48 \times b \times y}$$

where D is stiffness per inch of width, in lb.-in.²; P, load at proportional limit, in pounds; L, span, in inches; b, width of specimen, in inches, and y, deflection at proportional limit, in inches.

Average stiffness parallel (D₁) and perpendicular to the grain (D₂) of the core was then determined.

Lateral nail-resistance test. Specimens were 3 in. wide and 12 in. long. One-half of each lot of specimens were prepared so that the movement of the nail would be parallel and one-half so that the movement would be perpendicular to the grain of the core. A hole with approximately 90% of the shank diameter of a sixpenny bright box nail was bored at mid-width 1/2 in.

⁴A value obtained from Standard Methods of Testing Veneer, Plywood and Other Glued Veneer Constructions. ASTM Designation D805-52.

from one edge of each specimen to prevent splitting. A sixpenny bright box nail⁵ was driven into the pre-bored hole so that its shank projected about equally from each face. Thickness near the hole was measured before testing.

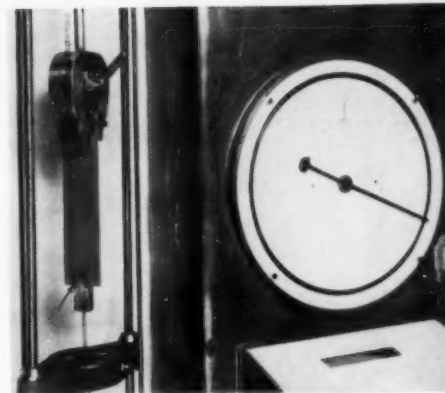
The resistance of the nails to lateral movement in the panel materials was measured on a universal testing machine with the aid of the apparatus⁶ shown in Fig. 4. Rate of loading was approximately 0.32 in. per min. and the loads required to separate the nails from the specimens were recorded.

Nailhead pull-through test. Specimens 5 in. square were prepared from each of the panel materials. The thickness of conditioned specimens was measured at mid-point. A fivepenny bright box nail⁷ was driven through

the center of the specimen until the head of the nail made contact with the specimen. A ¼-in. steel plate 5-in. square, with a 2-in.-diameter hole in its center, provided rigid support for the specimen to within a 1-in. radius around the nail during the test. The nailhead was pulled through the specimen on a universal testing machine with the apparatus shown in Fig. 5. Load was 0.32 in. per minute.

Ply-separation test. Ten specimens, each 6 in. square, were prepared from ½-in. A, 1/10-in. B, 3/16-in. C, 1/7-in. D3 and 3/20-in. container-grade plywood. A ¼-in. hole was drilled through the center of each specimen so that it could be suspended on a horizontal steel rod of sufficient length to permit a 1-in. space between adjacent specimens. This entire unit was placed on a rigid frame, which was lowered into a tank of water.

Each cycle of the test consisted of 4 hrs. of soaking in water and 20 hrs. of air drying at room temperature. Ten cycles completed the test. For the two-day week-end period the specimens remained out of water. Specimens were inspected after each cycle for delamination and warp. Ac-



4. LATERAL NAIL resistance test equipment. The nail, engaged by stirrup (arrow), is near lower end of specimen.

ceptance was based on the requirement that eight of the 10 specimens must not show glue separation after 10 cycles.

Results and discussion

In the following discussions, comparisons are generally made between results of tests conducted after specimens were conditioned at 75 deg. F.

TABLE IV—STIFFNESS RESULTS¹ OF SEVERAL PAPER-OVERLAID VENEER COMBINATIONS AND CONTAINER-GRADE PLYWOOD

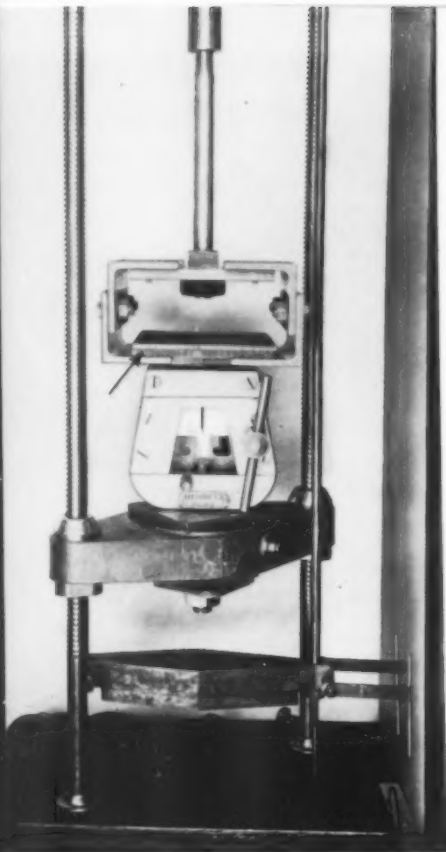
Nominal thickness and code of material (in.)		Species of core	Conditioned at 75 deg. F., 64% relative humidity										Conditioned at 80 deg. F., 97% relative humidity									
			Average actual caliper (in.)	Average moisture content (%)	Stiffness (D)						Square root of product of (D ₁) and (D ₂)	Average actual caliper (in.)	Average moisture content (%)	Stiffness (D)								
					High		Low		Average					High		Low		Average				
					With grain	Across grain	With grain	Across grain	With grain (D ₁)	Across grain (D ₂)				With grain	Across grain	With grain	Across grain	With grain	Across grain			
					(Lb./in. ² /in. of width)									(Lb./in. ² /in. of width)						(Lb./in. ² /in. of width)		
3/16 plywood	Group I	0.182	12.6	639	64	422	28	512	41	145	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)		
3/20 plywood	do	.144	11.4	288	16	232	9	261	13	58	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)		
1/6-A	Red oak	.176	11.4	659	112	500	85	583	92	232	0.189	29.2	407	19	264	12	321	16				
1/6-A	Sweetgum	.175	12.2	497	110	435	61	454	89	201	.187	33.2	396	37	319	12	349	27				
1/8-A	Red oak	.145	11.0	248	69	152	60	206	64	115	.162	34.9	236	14	161	6	200	9				
1/8-A	Sweetgum	.149	12.9	221	78	172	60	187	68	113	.167	34.3	(3)	18	(3)	10	(3)	14				
1/16-A	Red oak	.089	11.7	77	27	41	26	63	26	41	.098	36.2	29	3	16	2	21	3				
1/16-A	Sweetgum	.084	11.2	28	19	23	15	25	16	20	.095	42.7	21	4	16	2	17	3				
3/16-B	Douglas fir	.195	11.5	663	137	392	119	566	127	268	.215	29.2	1,102	64	590	41	857	50				
3/16-B	Douglas fir ¹	.193	11.5	765	151	612	106	670	127	294	.216	30.6	582	(2)	460	(2)	531	(2)				
1/8-B	Douglas fir	.146	9.1	333	60	248	26	305	42	113	.159	25.2	186	27	127	6	158	13				
1/8-B	Douglas fir ¹	.150	9.8	394	62	310	21	370	46	131	.158	25.5	365	(2)	137	(2)	284	(2)				
1/10-B	Douglas fir	.117	10.4	163	47	120	45	140	46	80	.131	27.0	126	21	83	5	108	14				
1/10-B	Douglas fir ¹	.125	10.5	230	58	133	42	183	51	97	.129	25.7	134	22	107	11	118	17				
3/16-C	Birch	.181	11.4	107	307	96	252	102	282	170	.215	30.7	68	164	52	140	59	152				
3/16-C	Soft maple	.183	11.1	107	343	92	250	100	299	173	.218	29.6	59	173	51	158	55	162				
1/8-C	Birch	.118	11.4	60	81	40	63	53	74	63	.133	27.3	44	47	41	31	43	40				
1/8-C	Soft maple	.119	11.4	53	89	39	76	45	84	62	.133	27.1	38	46	29	38	33	42				
1/7-D1	Basswood	.135	6.6	98	66	88	62	91	64	76	.141	18.2	85	38	67	35	74	36				
1/7-D3	Birch	.140	7.6	174	99	138	68	157	77	110	.147	21.4	148	44	110	38	122	41				
1/7-D3	Soft maple	.141	7.2	115	83	95	72	107	78	91	.145	19.2	89	60	73	40	83	47				

¹ Calculated from static-bending test data. Average stiffness values are averages of six specimens. Thickness and moisture-content values are averages of all specimens of like materials tested at one conditioning treatment, usually 12.

² Specimens delaminated or otherwise unsuitable for testing.

³ Mistakenly omitted.

⁴ Heavy white-pocket veneer core.



5. NAILHEAD PULL-THROUGH test apparatus. Note the $\frac{1}{4}$ -in. steel plate (arrow) which is directly beneath the test specimen in the angle-iron stirrup.

and 64% r.h. Results of tests after conditioning at higher moisture levels were more erratic and because of some delamination were largely influenced by the adhesives used in fabricating the materials.

In all tests, the moisture content of Material D was far lower than that of other materials when conditioned in like atmospheres for the same period of time. Its asphalt-impregnated overlays undoubtedly accounted for its lower moisture gain.

Compression test. The results of the corner compression tests showed that the overlaid-veneer panel boxes performed uniformly when tested in the dry condition, but with extreme variability when tested after the water-spray treatment. At both moisture-content levels, boxes made of material D3 withstood the highest, and those of Material B the lowest, compressive loads. The control boxes of 3/20-in. plywood withstood intermediate compressive loads. Table I presents the average results of these box tests along with the average tare weight and moisture content.

Box failure usually consisted of pulling box-assembly nails from adjacent cleats or the buckling of panels, which caused the panel-fabrication nailheads to pull through the panel, or both. Generally, the heavier and stiffer materials failed because of pulled box-assembly nails, while the thinner panel materials permitted excessive buckling and subsequent pull-through of nailheads. In one group of containers (Material B after water spray), the panels sheared parallel to the grain of the core into a series of narrow strips, each held in place by some of the panel-fabrication nails. Also, when tested dry, the performance of boxes made with 3/16-in. Material B was lowered by poor and spotty glue bonds between the veneer and the overlay.

Revolving-drum test. The average results of the drum tests are given in Table II. At either moisture-content level, the paper-overlaid veneer boxes performed as well as or better than those made of 3/20-in. plywood.

A surprising feature was the nature of the damage causing box failure. Invariably, final failure was due to pulled box-assembly nails, which permitted the top or bottom panel to open. Closer examination early in the test, however, revealed that the filler cleats on the box ends split at the nail line. One reason why the damage occurred first in this area might be that since the ends are smaller than the other box faces, they absorbed a greater unit force. Moreover, the filler cleats were not attached to the through cleats, hence underwent some unresisted movement when high internal forces acted on the box. This movement, resisted only by a few assembly nails from an adjacent panel, split the filler cleat at the assembly nails. Subsequent forces acting on this weakened area overcame the nail-withdrawal resistance of the filler cleat holding the nail points. At this stage, the utility of the box was probably critically impaired, even though the contents had not spilled. Such behavior would explain why a wide range of performance was indicated by a given lot of boxes.

After the boxes were water sprayed, little if any comparison could be made between performance of boxes having different panel materials. Boxes of Material B compared favorably with other boxes if judged only by total falls to failure. As in the compression test, some panels of Ma-

terial B split into several narrow strips.

After the water-spray treatment, nearly all of the drum-tested containers failed because the bottom panels separated from the ends. The reason is readily apparent. Since, immediately after spraying, the boxes were loaded, closed and tested, the withdrawal resistance of the assembly nails was greater when driven into wet wood and subjected to immediate withdrawal than when driven into dry wood that was water sprayed and then subjected to withdrawal.

Impact puncture-resistance test. All but three of the 19 veneer and paper combinations exhibited more puncture resistance than the plywood (3/20 in.) control specimens at the lower moisture content. At the higher moisture level, all the paper-overlaid veneers were superior to the plywood, which showed signs of delamination during the test. The average test results, along with the average measured thickness and moisture content of the test specimens, are given in Table III.

The results show that the puncture resistance for these panel materials was generally greater at approximately 25 to 30% moisture content than at 10 or 12%.

In many instances, a large variation existed between the highest and lowest puncture resistance of a given material having thin paper overlays on a thick wood core. Conversely, where the ratio of paper to wood is great, the puncture resistance between specimens was remarkably consistent and, at the same time, higher than that of thicker materials possessing a low ratio of paper to wood.

Static-bending tests. Table IV shows the stiffness of the various materials as calculated from the static-bending test data, in addition to the average thickness and moisture content of test specimens. For ease of comparison, the table also presents, for an entire box panel, a realistic stiffness value; the square root of the product of the average stiffness perpendicular to and parallel to the grain of the core. Comparison of these values shows that all paper-overlaid materials, except Material A (1/16 in.), were stiffer than the 3/20-in. plywood control and a few were stiffer than the 3/16-in. plywood.

Analysis of the average stiffness values for the grain and across-grain

TABLE V—RESULTS¹ OF LATERAL NAIL-RESISTANCE TESTS ON SEVERAL PAPER-OVERLAID VENEER COMBINATIONS AND CONTAINER-GRADE PLYWOOD

Nominal thickness and code of material (in.)	Species of core	Average actual caliper (in.)	Average moisture content (%)	Conditioned at 75 deg. F., 64% r.h.						Conditioned at 80 deg. F., 97% r.h.					
				Load (lbs.)						Load (lbs.)					
				High		Low		Average		High		Low		Average	
				With grain	Across grain	With grain	Across grain	With grain	Across grain	With grain	Across grain	With grain	Across grain	With grain	Across grain
3/16 plywood ²	Group 1	0.188	11.1	86	87	83	85	84	86	0.194	36.2	36	29	26	32
3/20 plywood ³	do	.148	11.0	83	84	61	65	73	77	.157	33.5	28	24	18	23
1/6-A	Red oak	.193	10.4	86	89	83	85	85	86	.206	26.4	83	83	57	73
1/6-A	Sweetgum	.188	10.1	86	87	83	86	84	87	.196	28.6	69	84	57	75
1/8-A	Red oak	.144	9.8	84	86	66	84	77	85	.167	28.4	71	69	51	41
1/8-A	Sweetgum	.150	10.6	84	88	83	87	84	87	.164	31.7	56	82	46	60
1/16-A	Red oak	.091	11.1	77	85	46	74	66	83	.102	38.2	28	34	24	17
1/16-A	Sweetgum	.085	10.3	70	84	58	66	64	81	.095	35.3	33	36	17	20
3/16-B ²	Douglas fir	.204	9.3	88	87	51	64	79	80	.222	23.7	84	44	28	13
3/16-B ²	Douglas fir ⁴	.197	8.8	83	85	34	78	71	81	.222	24.2	58	26	20	17
1/8-B ²	Douglas fir	.145	9.4	84	84	56	78	70	82	.157	23.2	64	21	34	13
1/8-B ²	Douglas fir ⁴	.146	9.3	72	85	38	45	52	78	.159	24.0	48	18	34	9
1/10-B ²	Douglas fir	.124	9.9	76	77	55	48	62	61	.133	25.4	46	28	31	6
1/10-B ²	Douglas fir ⁴	.124	10.1	84	84	44	73	70	81						
3/16-C	Birch	.190	10.9	89	89	88	87	88	88	.209	23.6	86	85	85	84
3/16-C	Soft maple	.190	10.6	89	89	88	87	88	88	.217	25.1	85	85	83	84
1/8-C	Birch	.124	10.5	84	85	83	84	84	84	.134	24.8	64	75	58	70
1/8-C	Soft maple	.127	10.8	85	86	84	84	84	85	.137	23.1	73	84	64	75
1/7-D1	Basswood	.136	6.1	70	82	57	72	63	77	.147	17.0	55	74	38	66
1/7-D3	Birch	.135	7.0	85	88	84	87	85	88	.152	18.6	83	84	62	83
1/7-D3	Soft maple	.142	6.9	86	88	84	87	85	88	.154	17.0	83	84	74	84

¹ Average loads are of six specimens; average caliper and moisture content are of 12 specimens.

² Specimens partly delaminated at 80 deg. F., 97% r.h.

³ Specimens badly delaminated at 80 deg. F., 97% r.h.

⁴ Heavy white-pocket veneer core.

⁵ Shortage of material prevented making tests at 80 deg. F., 97% r.h.

direction of a given material revealed that the ratio of one to the other was greater for the plywood than for any paper-overlaid veneer. Of all the materials tested, the highest ratio (20 to 1) was obtained with the 3/20-in. plywood.

The overlaid veneers usually had greater stiffness parallel to, rather than perpendicular to, the grain of the core. However, where the paper overlay was thick in comparison with the core, the reverse was true. For example, in Material C (3/16-in.), where the paper constitutes 67% of the panel thickness, the stiffness in the across-grain direction was approximately three times greater than in the with-grain direction of the core. Where the material was made up half of paper and half of wood, as in Material C (1/2 in.), the two values of stiffness were more nearly equal; and when the thickness of the wood core exceeded the thickness of both paper facings, the higher stiffness was recorded in the with-grain direction of the core.

Where the thickness of the over-

lays was great in relation to the core thickness, the species of the core had less effect on stiffness between panel materials of like total thickness. In materials not having a high percentage of paper, core species made more pronounced differences in stiffness qualities.

This was shown well by Material D, where the core species varied among the three panels in this group, but the overlays were identical. The comparative stiffness values for this group of materials were as follows: birch

core, 110; soft-maple core, 91; basswood core, 76.

Several specimens of Material B and all specimens of plywood delaminated badly when conditioned at 80 deg. F. and 97% r.h., and thus could not be tested in bending.

Lateral nail-resistance test. Maximum average loads developed in pulling nails from the various materials in a lateral direction, together with average thicknesses and moisture content, are presented in Table V. A narrow plug of veneer and overlays

6. PLY-SEPARATION TEST of plywood (far left) and paper-overlaid veneers (Materials A, B, C and D), showing extent of warpage and delamination after 10 cycles of water soaking and air drying.

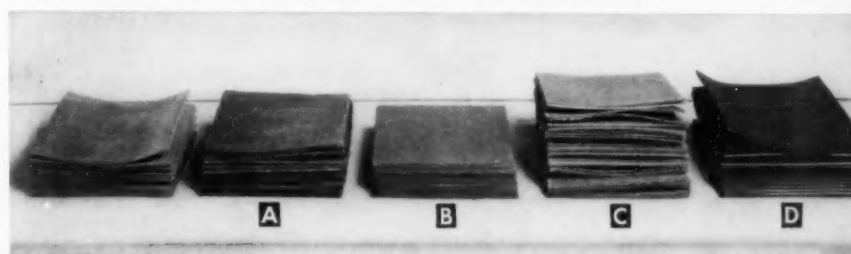


TABLE VI—RESULTS¹ OF NAILHEAD PULL-THROUGH TESTS ON SEVERAL PAPER-OVERLAID VENEER COMBINATIONS AND CONTAINER-GRADE PLYWOOD

Nominal thickness and code of material (in.)	Species of core	Conditioned at 75 deg. F., 64% r.h.					Conditioned at 80 deg. F., 97% r.h.				
		Average actual caliper (in.)	Average moisture content (%)	High (lb.)	Low (lb.)	Average (lb.)	Average actual caliper (in.)	Average moisture content (%)	High (lb.)	Low (lb.)	Average (lb.)
3/16 plywood ²	Group 1	0.182	10.6	93	86	88	0.191	32.5	83	49	60
3/20 plywood ³	do	.142	11.4	82	51	70	.151	37.8	39	18	24
1/6-A	Red oak	.191	9.8	88	84	85	.201	27.1	85	63	81
1/6-A	Sweetgum	.186	10.2	86	84	85	.202	33.8	84	51	62
1/8-A	Red oak	.152	9.9	86	84	85	.160	27.0	85	84	84
1/8-A	Sweetgum	.158	12.0	87	85	86	.167	30.6	86	72	83
1/16-A	Red oak	.090	11.3	80	57	65	.095	31.0	59	35	44
1/16-A	Sweetgum	.088	10.2	74	60	66	.096	31.5	63	34	45
3/16-B	Douglas fir	.200	11.7	90	86	88	.222	21.8	85	77	83
3/16-B	Douglas fir ⁴	.196	9.6	86	78	83	.215	23.7	83	49	68
1/8-B	Douglas fir	.141	11.6	84	66	76	.162	24.7	84	45	61
1/8-B	Douglas fir ⁴	.142	9.2	88	58	82	.161	23.5	85	68	82
1/10-B	Douglas fir	.113	9.8	86	73	82	.140	27.8	45	26	35
1/10-B ⁵	Douglas fir ⁴	.128	10.9	84	52	66					
3/16-C	Birch	.182	10.6	92	91	91	.208	24.8	89	88	88
3/16-C	Soft maple	.182	10.2	92	91	91	.210	25.1	88	87	88
1/8-C	Birch	.120	11.0	88	87	87	.126	29.4	86	84	85
1/8-C	Soft maple	.122	10.8	88	87	88	.127	28.4	86	84	85
1/7-D1	Basewood	.138	6.7	79	70	74	.144	16.7	84	70	75
1/7-D3	Birch	.136	7.2	87	86	86	.147	16.4	85	84	85
1/7-D3	Soft maple	.142	6.9	87	81	85	.147	18.5	84	75	82

¹ Average values are of six specimens.

² Specimens partially delaminated at 80 deg. F., 97% r.h.

³ Specimens badly delaminated at 80 deg. F., 97% r.h.

⁴ Heavy white-pocket veneer core.

⁵ Shortage of material prevented making tests at 80 deg. F., 97% r.h.

sheared from the specimen when the direction of pull was parallel to the grain of the core. With the direction of pull perpendicular to the grain, the veneer was split across the entire 3-in. width of the specimen and double shear occurred within the two overlays near the glue lines; the small section of the core then separated easily from the paper facings. By virtue of its grain orientation, plywood failure was a combination of those just described.

The materials most consistent in lateral nail movement after conditioning at 75 deg. F. and 64% r.h. were C, D3, 3/16-in. plywood, and A (sweetgum core). Materials which showed little variation in test results generally sustained the highest maximum loads.

The average loads developed in the across-grain direction for the various materials were nearly equal to or greater than the loads developed in the grain direction at the lower moisture-content level. This situation remained true at the higher moisture content for Materials A, C and D, but not for plywood or Material B, which delaminated at the glue line and significantly decreased in lateral nail resistance.

Nailhead pull-through test. Maximum loads developed in pulling the

heads of nails through the various materials are shown in Table VI. At the lower moisture content, the maximum forces required in this test were approximately the same as those required in the lateral nail-resistance test for a given panel material. At the higher moisture level, the forces were generally higher for the pull-through test. Presumably this was because the paper overlays were less influential in the pull-through test.

In these limited tests, no general correlation was indicated between maximum loads developed and total thickness of the materials. Some of the nails might have coincided with hidden defects in the veneer and hence gave materially lower performance. Such a situation might well explain such apparent discrepancies as the fact that specimens of Material B containing heavy white pocket occasionally performed better than specimens with light or medium white pocket, and sweetgum occasionally performed better than red oak (Material A).

All paper-overlaid veneer materials, except 1/16-in. A and 1/10-in. B (heavy white pocket), possessed more resistance to nailhead pull-through than the 3/20 in. plywood at the lower moisture-content level.

Ply-separation test. Although the

container-grade plywood used in this investigation was purchased as conforming to Specification JAN-P-139, Type C—weather resistant, its performance in this test indicated that it met the requirements of Type B—special moisture resistant. There was no visible ply separation after the 10-cycle test and only one of the 10 specimens showed warpage. Materials A and B showed no sign of either delamination or warpage after 10 complete soaking-drying cycles. Material C failed to pass this test, since three specimens showed separation in the paper adjacent to glue lines after one cycle and five specimens after three cycles. Material D also failed to pass this test because eight specimens showed some paper failure after the third cycle. Fig. 6 shows the test specimens after this 10-cycle test.

Since the failure evident in the two paper-overlaid veneer materials occurred adjacent to, but not at the glue line, the failures cannot be attributed to the adhesive. A possible explanation might be that warpage of the veneer was responsible, since similar failure was not evident in paper-overlaid veneer specimens that did not warp. The distended core of Material B and seasoning checks in Material A made some space avail- (This article continued on page 212)

Polyethylene in barriers

Tests indicate three-ply web with coating on foil is superior to four-ply material in MIL-B-116-B applications. By E. S. SHORKEY*

Water-vapor-barrier materials of various types are finding ever wider use in the packaging of items which need a high degree of protection over any of the many climatic conditions of the world.

For the military, such items as electronic parts, telephone switchboards, aircraft engines, etc., are packaged in flexible barrier materials which conform to Specification MIL-B-131-B and the packaging procedure is in accordance with MIL-B-116-B. In general, the methods of packaging employed with flexible barrier materials make use of the floating barrier, the carton-barrier-carton and the cushioned-item bag.

All of the flexible barrier materials conforming to MIL-B-131-B have thin-gauge aluminum foil as one of the component parts. As Gelber (1)¹ has pointed out, the use of foil with a plastic membrane on one or both sides provides an excellent water-vaporproof sheet. During World War II and shortly thereafter, laminated Pliofilm structures and structures using lead foil with polyvinyl-butylal coatings were used extensively in packaging items which today are packaged in barriers using scrim, aluminum foil and one or two plastic films. Reasons for the swing to aluminum foil and other plastic films include cost and better performance under the present specifications.

With United States military and naval bases located in practically every climatic region of the world, it is possible to find the same flexible barrier materials protecting items in a South Pacific Ocean island base or at a base in the Arctic region where temperatures of minus 80 deg. F. are not uncommon. Probably most of the items are used or stored, at least at first, in domestic locations, but no one knows when they may be transported to some far corner of the world. Spe-

cification MIL-B-131-B is an outgrowth of previous specifications against which materials were made and in which the military felt there was a need for improvement in view of today's conditions.

Background

As recently as three years ago the majority of the approved barrier sheets were made by laminating four component webs together. These consisted of scrim, polyethylene, aluminum foil and vinyl film. These same structures are in wide use today in defense packaging and are doing an excellent job. The polyethylene in the four-ply barriers gives added water-vapor protection to the structure when the foil (0.001-0.0007 in.) is pinholed as a result of flexing, either during the packing operation or during use. The vinyl film alone will not give the proper protection, particularly if the

barrier is flexed at low temperatures. The gauge of the polyethylene in the four-ply barrier sheets is usually 0.0015 in.

The laminant used in bonding the polyethylene is generally a rubber type. Each set is laminated separately: i. e., the vinyl to the foil, then the polyethylene to the foil side of the foil-vinyl structure and, finally, the scrim to the polyethylene. Among manufacturers, the sequence of operations may vary, but there are always three operations involved in making the four-ply sheets.

A few years ago the first barrier sheets appeared on the market using polyethylene extrusion-coated on foil. To meet the requirements of MIL-B-131-B seam-strength tests, a thickness of 0.003-0.0035 in. of polyethylene was needed. This made it possible to eliminate the vinyl ply. These materials, therefore, consisted of scrim

1. PREPARING WVT TEST of MIL-B-131-B bags after they have been twisted in Gelbo twist-tester. Sealed bags with pre-weighed quantity of calcium chloride will be exposed in General Foods cabinet.

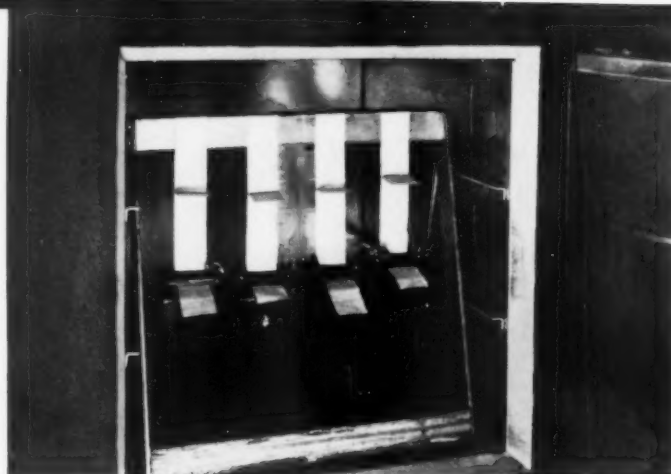


*Customer Research Representative, Shellmar-Betner Div., Continental Can Co., Mt. Vernon, Ohio.

¹Numbers in parentheses identify References appended.



2. EASE OF HEAT SEALING is a feature of polyethylene barrier materials. Most polyethylene-faced barrier materials can be sealed at 450 deg. F., 40 psi and 3 sec. dwell time.



3. TESTING THE SEALS is done by hanging 1-in. strips in static-load frame. Alternately, for 1 hr. each, the samples are exposed with a 2-lb. weight at 100 deg. F. and a 10-oz. weight at 160 deg. F. Separation beyond 50% of the seam width is rejectable.

cloth, aluminum foil and polyethylene—a three-ply structure accomplished in two operations. The film thicknesses in the three-ply structures have a total thickness of 0.003-0.0035 in. in comparison with average film thickness of 0.0025 in. in the four-ply sheets.

As a result of these new structures, several advantages became apparent. First, there was a price advantage to the Government of about 5 to 7 cents per square yard. The functional properties, such as WVT, appeared to be superior to those of the four-ply sheets. This is not to imply that the four-ply sheets do not meet the requirements of MIL-B-131-B, for they do, but the three-ply material with extruded polyethylene has even lower transmission rates. For example, materials tested for WVT after twisting on the Gelbo twist tester (2) at various temperatures gave the following results (gm./24 hrs./100 sq. in. at 90% R.H.):

	Room temperature	-20 deg. F.	-65 deg. F.
3-ply	0.01-0.02	0.02-0.04	0.04
4-ply	0.01-0.06	0.14-0.29	0.576

It is apparent that the three-ply polyethylene-extrusion structure gives superior WVT performance at low temperatures.

It is interesting to note that a three-ply experimental sheet using nearly 4-mil vinyl film in place of polyethylene gave the following WVT rates after twisting on the Gelbo twist tester:

Room temperature	-20 deg. F.
0.076	0.175

It is easily understood from the above why a sheet of polyethylene

must be included in the four-ply structure when vinyl film is used as the facing material.

Comparisons

A comparison was made of the performance of the three-ply materials versus the four-ply materials after exposure to the cyclic performance test under MIL-B-131-B. What this cycle consists of is shown in Table I.

A dummy motor weighing 50 lbs. was packaged according to Method II-A of MIL-P-116 and a tared amount of desiccant weighing approximately 500 gms. included. After the cyclic test, the desiccant was reweighed. The comparative values on moisture pick-up were:

4-ply	3-ply
9-14%	6-7%

TABLE I

Day	Time	Exposure condition	Condition when rough handled
1	10 a.m. to 4 p.m. overnight	Room temperature $160^{\circ} \pm 5^{\circ} \text{F.}$, $60 \pm 4\%$ rh	
2	8-2 2-4 overnight	Six falls in drum Room temperature $-65^{\circ} \pm 3^{\circ} \text{F.}$ $160^{\circ} \pm 5^{\circ} \text{F.}$, $60 \pm 4\%$ rh	Warm
3	8-2 2 2-4 overnight	Room temperature Six falls in drum $-65^{\circ} \pm 3^{\circ} \text{F.}$ $160^{\circ} \pm 5^{\circ} \text{F.}$, $60 \pm 4\%$ rh	Room temperature
4	8-2 2-4 4 overnight	Room temperature $-65^{\circ} \pm 3^{\circ} \text{F.}$ Six falls in drum $160^{\circ} \pm 5^{\circ} \text{F.}$, $60 \pm 4\%$ rh	Cold
5	8 8-2 2-4 overnight	Six falls in drum Room temperature Tap-water spray $160^{\circ} \pm 5^{\circ} \text{F.}$, $60 \pm 4\%$ rh	Warm
6	8-2 2 2-4 overnight	Room temperature Six falls in drum Tap-water spray $160^{\circ} \pm 5^{\circ} \text{F.}$, $60 \pm 4\%$ rh	Room temperature
7	8-2 2-4 4 overnight	Room temperature Tap-water spray Six falls in drum $160^{\circ} \pm 5^{\circ} \text{F.}$, $60 \pm 4\%$ rh	Room temperature
8	8-2 2-4 overnight	Room temperature Tap-water spray Room temperature	

Since all of the plastic in the three-ply material is on one side—i.e., the inside of barrier structure—greater protection is afforded the foil during packing operations. This is true particularly in a carton-barrier-carton (Method II-B) or carton-barrier (Method II-c) application. As the carton is inserted into the barrier bag, the edges of the carton create a strain at the point of contact. A thickness of 3.5 mils of polyethylene will give greater resistance to scuffing than 1.0 mil of vinyl or other plastic.

The manufacture of the polyethylene-faced barrier sheets is accomplished in a manner different from that of the four-ply barrier sheets. Polyethylene is hot extruded onto the aluminum foil as a coating and bonding is accomplished without the aid of an adhesive. The scrim is then laminated to the reverse side of the aluminum foil. Here again the sequence of operations may vary among manufacturers.

A number of other military specifications have been revised or amended, among them JAN-P-117, JAN-B-121 and JAN-B-125. In other cases new specifications have been written, as MIL-B-13239. Where these specifications in the past have allowed the use of many varied structures, their amendments or revisions now tend to narrow down the restrictions. Polyethylene-coated kraft paper in various gauges, weights and forms is among the few materials which now meet the revised or amended specification because of, for example, greater water-proofness after flexing at low temperatures, greater durability, improved greaseproofness and many other attributes.

Because polyethylene is also heat sealable, these structures become extremely versatile and one structure may fulfill the requirements of several specifications. This is particularly advantageous from an inventory and availability standpoint.

Polyethylene is being more widely used as a laminating agent. This, of course, serves two functions, viz: an adhesive to bond two materials together and a film in itself which has desirable functional properties such as flexibility, water-vaporproofness, strength, etc. Lamination may be employed to bond a kraft paper to aluminum foil which has been heat-seal coated; the structure will have infinitely greater water-vaporproofness than one which has used a thin layer

of adhesive to bond the two webs together. The structure using polyethylene as an adhesive will also withstand greater flexing, will generally have greater durability and should have excellent resistance to delamination on heat sealing. Structures such as these, however, tend to be stiffer than adhesive-bonded materials and may present problems in specific areas of use.

Temporary outdoor barrier

One of the most recent developments in the field of defense packaging using polyethylene is the temporary outdoor barrier material. This material is a typical MIL-B-131-B, Class I barrier to which has been applied a 0.0025-in. film of polyethylene over the scrim, this becoming the exposed portion of the structure. Since the scrim is subject to dimensional changes when exposed to the elements and is likely to delaminate, polyethylene is applied to give the scrim greater protection, thereby giving such a structure greater latitude of packaging use, which includes temporary storage outdoors.

Since polyethylene is the outer surface of the structure, carbon black has been incorporated in the film to give it greater resistance to ultra-violet light. Normal polyethylene, when exposed to ultra-violet, turns brittle and generally degrades in a matter of a few months. By adding a small percentage of carbon black to the film, the resistance may be increased many times. Tests show that film with carbon black exposed to weatherometer tests in excess of 250 hrs. will exhibit no physical change.

Several storage tests have been conducted on such a material to show its value as a temporary outdoor flexible barrier material. The first test was conducted under the auspices of the Tumpane Co. of Marietta, Ga., and Wright-Patterson Air Force Base, Dayton, Ohio. A No. 16 Bryant grinder was packaged according to Method II-A (MIL-B-116-B) and sent to Elgin Air Force Base for testing in the all-weather room. Readings were taken on this material, as well as various other outdoor barrier materials, with a Hydrotector³ after one week of outdoor storage. Values are shown in Table II.

The test cycle was as follows: seven days at minus 20 deg. to plus 40 deg.

³ American Instrument Co., Silver Spring, Md.

TABLE II

Value	Material
9.2	Vinyl-coated webbing plus three coats BFC
0.4	Webbing with one coat Bitumastic and one coat Gilsonite coated to make six layers
4.65	Vinyl cocooning
7.6	Vinyl cocooning
0.27	Polyethylene barrier material

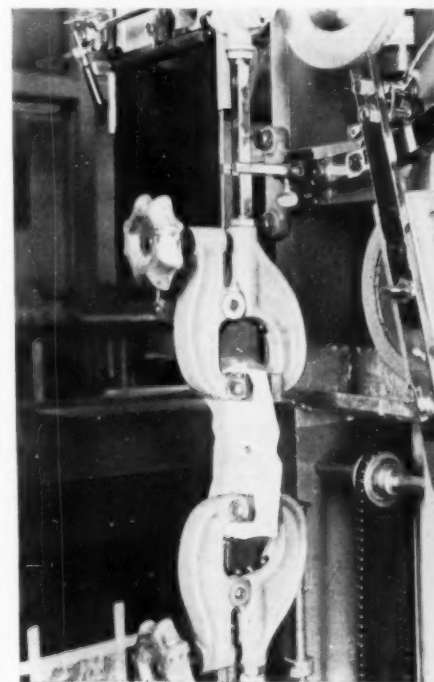
F.; seven days at 75 deg. to 125 deg. F., 90% R.H.; seven days at first cycle and seven days at second cycle.

At the conclusion of the test, the polyethylene barrier was opened and the grinder examined. It was in excellent condition, showing no evidence of rust or corrosion.

In addition to its higher degree of protection, this material shows a substantial price advantage over other constructions tested. Large envelopes can be pre-formed and assembled around the item in a very short interval of time, making the labor and time costs very low.

There are many instances where
(This article continued on page 210)

4. TENSILE TESTER, Scott Model J-2, determines the breaking strength. The material is held firmly in upper and lower jaws, while the lower jaw travels downward at a constant rate. Breaking point is registered on the dial at top of machine.



Questions & Answers

This consultation service on packaging subjects is at your command. Simply address your questions to Technical Editor, Modern Packaging, 575 Madison Ave., New York 22, N. Y. Your name or other identification will not appear with any published answer.

Determining the package to use

QUESTION: I was very impressed at the number of plastic companies which exhibited at the recent Packaging Exposition in Chicago. Many of them showed several different kinds of resins, most companies had several grades of their resins and all showed their products in many forms and uses. These displays of film, sheeting and molded-resin uses in packaging are very interesting, but are also confusing. My question is: How does a small company find the preferred package type and proper resin with so many possible combinations and so many conflicting claims?

ANSWER: There is no simple procedure for determining the most effective, economical and protective package for any product and this applies regardless of whether the package under consideration is of plastic or any other material. One must have sufficient knowledge concerning the packaging characteristics of his product, the time and area of storage and its merchandising requirements so that this information can be given to material manufacturers or package suppliers.

Companies engaged in the manufacture of synthetic resins or of transparent films of all types have complete information on methods of fabricating and the protective and physical qualities of their resins and some data on end uses.

It will be necessary for you to make decisions on the general type of package which you think most suitable for your product. You can then get recommendations from converters and resin manufacturers. The next step is for you to put your product in sample packages of different constructions and to have your laboratory make tests on their effect on the products after accelerated storage. If you do not have laboratory facilities for this purpose, there are many com-

mercial laboratories well equipped to perform this service for you.

Results of these tests, together with sample packages for merchandising opinions and some estimates of cost, should supply you with sufficient information to make a decision on which type of plastic is most suitable for your product.

WVT of asphalt-laminated board

QUESTION: We cannot find comparative data on water-vapor-transmission tests on paperboard made with asphalt emulsions as the center layer. We would like to compare this board with asphalt and also wax-type laminations.

Can you tell us where such data can be found?

ANSWER: Paperboard made with emulsions as a center ply is not considered as having an effective resistance to water-vapor transmission. For this reason, it is doubtful whether you will find it rated in comparison with asphalt laminations or waxed-type laminated boards. Asphalt-emulsion board has proved to be effective for many different types of containers for different products, but in general is most effective where a high degree of water resistance is not a requirement.

It is possible to laminate board with asphalt and if a sufficient amount of laminate is used, the result can be an effective moisture barrier. However, the waxy type of lamination which is usually made with a board plus a thin paper is generally considered to be the most effective moisture barrier of these classes of materials.

However, there are so very many grades of these materials that we suggest that you have your laboratory make tests of the grades you have in mind to make sure that the comparisons are limited to specific types and grades.

Testing for blocking

QUESTION: We have been testing various resin and resin-wax mixtures as extrusion coatings on paper and boxboard. Sometimes we have seen samples that showed tackiness or picking when the rolls were unwound. Is there any standardized test method to measure this tendency to tackiness? Also what is the lowest blocking temperature that can be tolerated?

ANSWER: Some years ago the Packaging Institute proposed a test procedure to measure the blocking temperature of packaging materials. It is suggested that you write them about the present status of this test procedure. There are three important factors that affect the blocking of materials. These are pressure, temperature and humidity. Some materials are not affected by changes in humidity, while others show large changes in blocking temperature.

The blocking of resin mixtures or of any thermoplastic coating can be caused by excessive tension in wind up or by incompletely cooling the coated web. The use of powder or sprays is not a reliable answer to preventing blocking. Localized blocking can be caused by resting heavy rolls on their sides. They should always rest on end or suspended from a center shaft.

The lowest allowable blocking temperature can depend on many factors. Commercial waxed papers use waxes with melting points as low as 125 deg. F., but losses can occur in summer weather or in transit. Also shipments going to the southern part of this country or for export can require higher blocking resistance. Certainly a blocking temperature of 140 deg. F., tested humidified, should be satisfactory for coated roll stock that has been properly prepared and packed. Your tests for blocking should be done with samples where the coatings are face to face as well as where the coating is in contact with the paper.

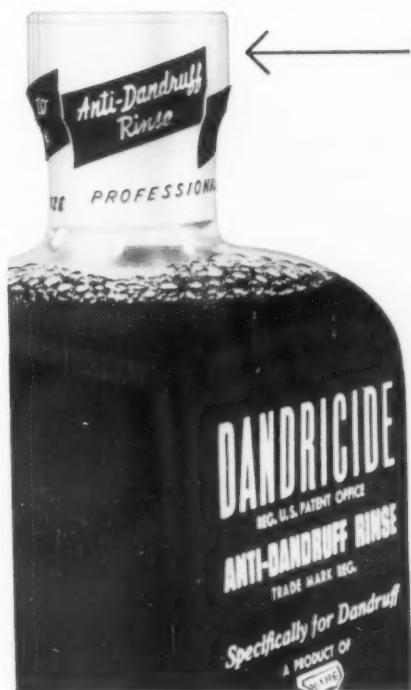
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KING RESEARCH, INC.
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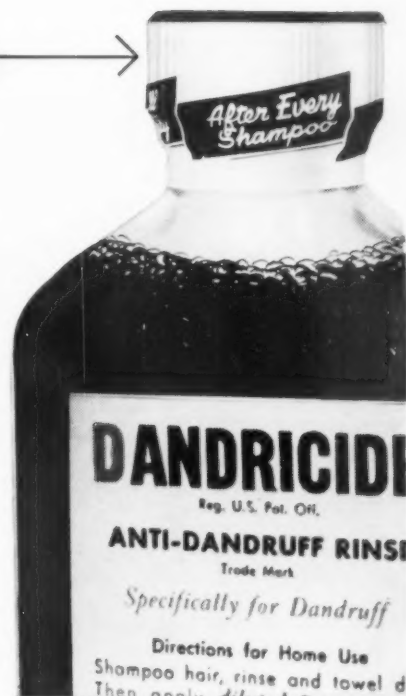
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DU PONT CEL-O-SEAL BANDS

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Equipment and materials

AN IMPROVED POLYETHYLENE PLASTIC

known as Super Dylan polyethylene, developed by Koppers Co., Inc., Pittsburgh, is reported to have improved qualities for packaging films, squeeze bottles and other applications. Films produced from the material reportedly are strong, light weight, heat resistant, non-blocking and can be made in thicknesses to feed through automatic machines. Sheets can be extruded for use in vacuum forming. Molding of the new polyethylene can be done in present conventional molding machines without special equipment, although heat requirements are a little higher than for conventional polyethylene. Preliminary tests are reported to indicate that the diffusion of certain volatile materials through bottles made of Super Dylan is about one-third that of ordinary polyethylene bottles. Other qualities claimed for the new material are improved rigidity and low-temperature impact, better chemical resistance and higher tensile strength. Koppers is now producing the material in small commercial quantities, but its availability is expected to be considerably increased by this fall.

SOLDERLESS FOOD CANS FOR FROZEN JUICES

that permit use of the complete can circumference for lithographed labeling have been developed by Continental Can Co., 100 E. 42 St., New York 17, after two years of intensive study.

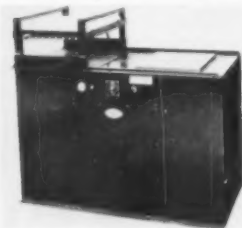


The extreme differences in temperature to which the can is subjected during filling, freezing and storage presented many problems that had to be solved before the proper structure and materials could be found to make the can

suitable for frozen-juice products. Commercial packs have proved that the can is rugged and withstands the rigors of high-speed packing and handling, and rapid distribution, according to Continental.

LOW-COST VACUUM-FORMING MACHINES

selling for \$975 have been announced by the Vacuum Forming Corp., Port Washington, N. Y. The new Model 88 VacForm is an actual production press which reportedly can be operated



without specially trained skilled workers. It is 54 in. high, weighs 300 lbs. and requires only 28 by 59 in. of floor space. Molds of any size from 2 by 2 in. up to 16 by 16 in. can be used and the machine draws up to a depth of 5 in. The Model 88 is suggested as an adjunct to the production line of companies already engaged in

plastic fabrication of other types. It also is recommended to concerns already doing vacuum forming, as an inexpensive extra unit for developmental work, short production runs and efficient manufacture of small-sized items.

A NEW DIP TUBING FOR AEROSOLS

designated Aeroflex FH, has been announced by Anchor Plastics Co., Inc., 36-36 36 St., Long Island City 6, N. Y., to supersede the company's Aeroflex P tubing. The new tubing is said to have greater resistance to cracking and is less expensive than the

older one. Whereas Aeroflex P has a slight blue color, the new product will be pink to enable the manufacturer and user to distinguish it during in-plant operations. A gold-colored tubing is also available for glass aerosols where the dip tube is clearly visible.

A NEW BAG PACKAGER

that is a self-contained, portable unit featuring two large storage compartments for bags and a drawer for change-over

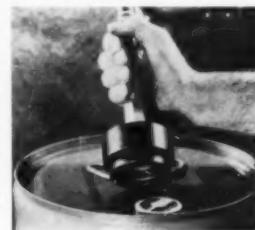


tools has been introduced by the Errich International Corp., 5 E. 35 St., New York 16. Suitable for bagging such products as shirts, sweaters, scarfs, knit goods, carded items, etc., it is said to be particularly adapted to high-speed loading into bags ranging from 8½ to 10½ in. wide. High rates of speed can be achieved with polyethylene, cellophane, cellophane combinations, Pliofilm and kraft, according to the company.

This Deluxe Speedy Bag Packager 91R works on the air-ratio principle and takes bag widths from 5 to 18 in. wide.

TWO NEW SIMPLE, LIGHT CRIMPING TOOLS

for securing Upressit tamperproof bands, used in conjunction with Upressit closures, have been introduced by the Upressit Products Corp., Danbury, Conn. One is air operated and the other is hand operated. Both are designed to meet the requirements of either small, medium or large-volume packagers. The air-operated crimping couples to the end of a compressed-air hose. An easy squeeze of the trigger crimps the sealing band tightly in place over the cap. The hand-operated tool has a lever-type action which takes only a squeeze of the operator's hand to crimp the band in place. Both tools are made in sizes to seal nozzle openings from 26 to 73 mm. in diameter.

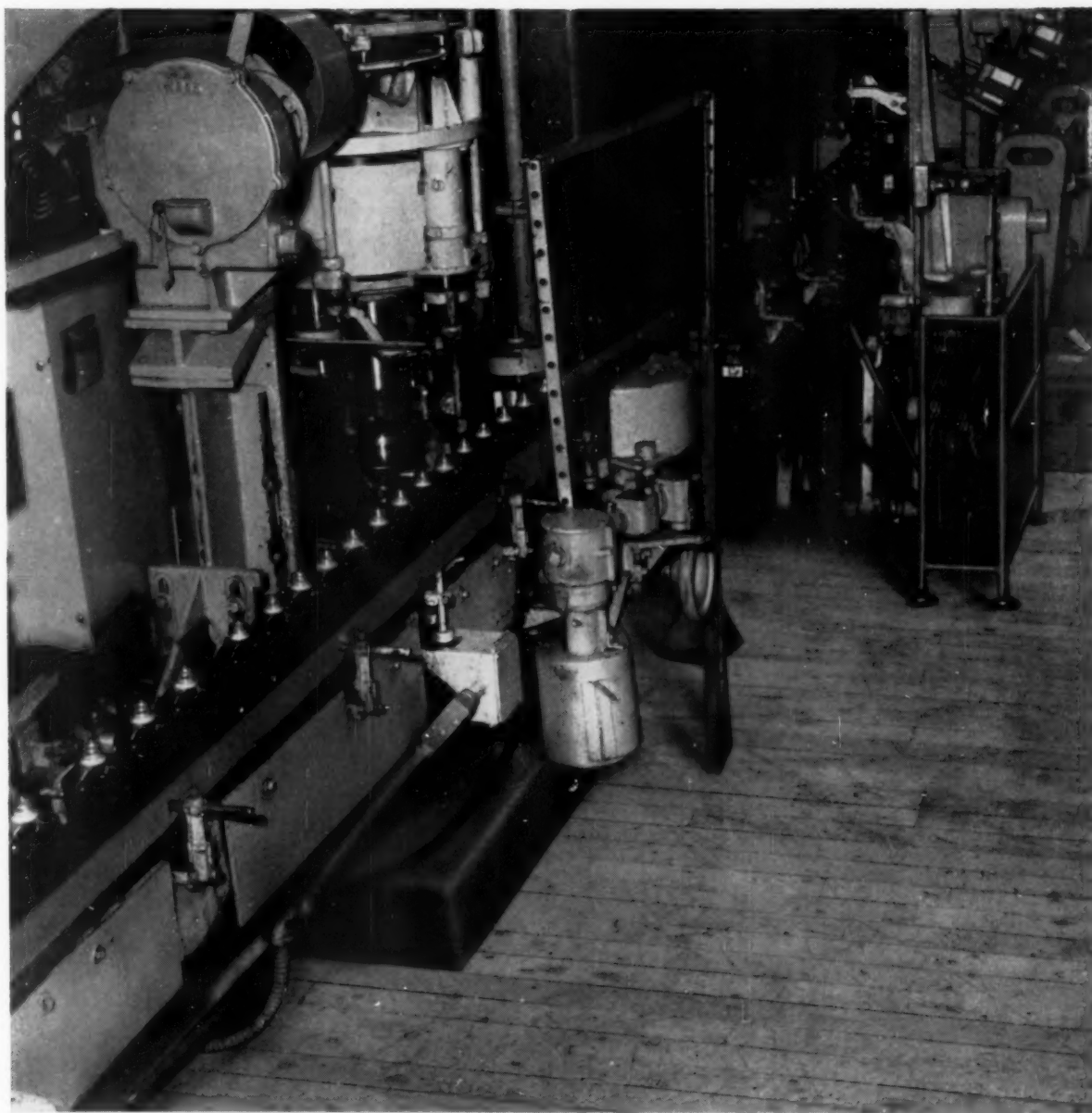


A STRONG, ECONOMICAL MULTIWALL-BAG CLOSURE

utilizing rayon thread and flat kraft tape has been announced by the St. Regis Paper Co., 230 Park Ave., New York 17. Developed after two years of research, the closure is available on the company's sewn-valve bags and on factory-closed ends of open-mouth bags. It is possible to wax dip both rayon thread and flat tape, and colored tape is available. Any sewing machine can be readily converted to the use of rayon thread and St. Regis provides detailed instructions on converting sewing machines to enable users of open-mouth bags to sew them in their own plants.

A NEW CROWN-LINING PROCESS

that eliminates the use of cork has been announced by the Dewey & Almy Chemical Co., division of W. R. Grace & Co., 62 Wittemore Ave., Cambridge 40, Mass. The patented process involves flowing a special compound into the crowns. The crowns then pass through an oven where the sealant is baked into position. The seal becomes an integral part of the crown and cannot shake loose. Production speeds up to 1,200 crowns a minute are reported. Advantages claimed for the new process



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Armstrong "HI-TORK" MOLDED CAPS

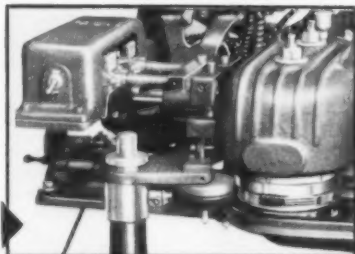
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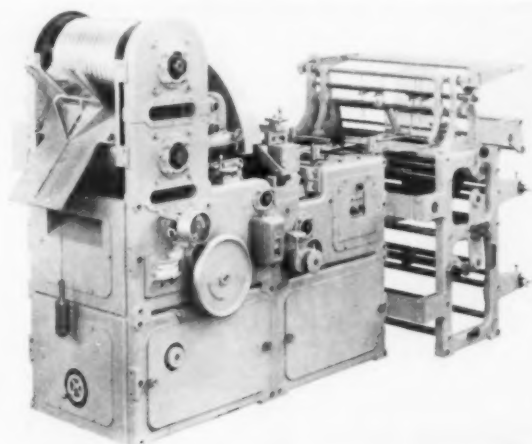
Machines for Bag Sealing • Bag Making • Bag and Carton Weighing and Filling • Wrapping • Labeling • Sheeting and Gluing

Equipment and materials

are; uniformity can be maintained from raw-material stage to finished product; built-in resistance to permeability and taste transfer; spotting is no longer necessary; crowns can be washed and sterilized without affecting the seal. Dewey & Almy provides all the components for the new process, which includes application machinery, baking ovens and compound supply. The process has been tested in semi-commercial and commercial packs with all types of carbonated, non-carbonated and pasteurized beverages, according to the company.

A NEW MODEL TRANSPARENT BAG MAKER

has been introduced by Simplex Packaging Machinery, Sub. of Food Machinery & Chemical Corp., 534 23 Ave., Oakland 6, Calif. Designated Simplex Model 300, it will produce bags from



any heat-sealable film. Bags made on the new machine are said to be of a unique siftproof construction. Speeds up to 200 bags per minute can reportedly be attained.

A HEAVY-GAUGE PLASTIC LINER

for steel containers, developed by the Jones & Laughlin Steel Corp., 3 Gateway Center, Pittsburgh 30, is designed for transportation of chemicals and other liquids at reduced costs. It is said to be the first closed-top plastic liner for steel containers that is an integral part of the container, installed during container production. The new JaLiner is available for 5-gal. shipping pails, either open with a 16-lug cover or with a close top. Pouring fittings of either tinplate or polyethylene are available. The new liner is constructed of heavy-gauge polyethylene tubing and sheet, reportedly heavier than ever before presented in an electronically sealed contour liner.

The company states that it has successfully tested the liner for soft-drink concentrates, photographic chemicals, pharmaceuticals and germicides.



A NEW LINE OF SLITTER-REWINDERS

is being made by the Dilts Machine Works Division, The Black-Clawson Co., Fulton, N. Y. Several models originally developed by the Bagley-Sewall Co. prior to its acquisition by Black-Clawson last year have been improved. The new Dilts line includes several models of single and duplex rewinders and two

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Equipment and materials

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CAN WITH POLYETHYLENE POURING NOZZLE

specially designed to hold liquid detergents and other corrosive products has been developed by Continental Can Co., 100 E. 42 St., New York 17. The 12-oz. can, size 211 by 508, with



threaded, dripless polyethylene nozzle is constructed to provide the low metal exposure required for many hard-to-hold products that could not previously be packaged in metal, according to the company. The tall nozzle, which comes in almost any color, is said to permit an even pouring flow and an abrupt, exact cut-off. It is attached to the can dome by a specially engineered method. The new Fluid Flow can has a side seam cemented with thermoplastic cement which permits complete all-around lithography. The can dome can be furnished plain, coated or lithographed

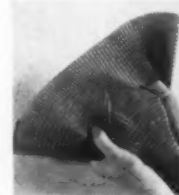
in colors. Interior can be coated with special enamel linings for corrosive resistance; an outer resistant varnish can be applied.

A NEW VACUUM-FORMING MACHINE

known as the Pex-Twin model has been introduced by Comet Industries, Franklin Park, Ill. The unit may be operated manually, semi-automatically or fully automatically. Fast and economical operation is claimed for the machine. No warm-up is necessary; the machine is always ready to operate. The heating elements are Goldflexor lamps, producing spot-zone controlled heat directly in the sheet of plastic rather than wasting it in space. Two tables are provided for maximum production efficiency and versatility. There is a series of ports on each table for vacuum and pressure during the forming cycle.

A NEW TYPE OF BIONDULATED CUSHIONER

made from forged fibres, permanently crimped, has been introduced by the Sherman Paper Products Corp., Newton Upper Falls 64, Mass. This new material, made without any glue, is called Carbion.



It is manufactured by a patented process at extremely high temperatures and pressures which results in a forging of fibres to a degree of permanence, the company says, that exceeds the limits of standard laboratory testing equipment.

Carbion has four major and two minor impact-dispersion patterns instead of the conventional two, which reportedly results in greater cushioning and recovery.

PLASTIC BASKETS FOR CUT-UP POULTRY

is a new method of merchandising fresh and frozen cut-up chicken. The poultry "Plasket," developed and marketed by Pacific Plastic Products, 1620 Armstrong, San Francisco, replaces the conventional paper tray for packaging a whole cut-up fryer, broiler or fricassee bird, or selected parts. These colorful baskets have greater display value, eliminate wilted and shredded paper trays, allow complete visibility of poultry parts and are sanitary, tasteless and odorless. They are said to be exceptionally sturdy, withstand cold far in excess of freezing requirements and are adapted to production packing. A small



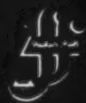
(This article continued on page 177)

brilliant performance...



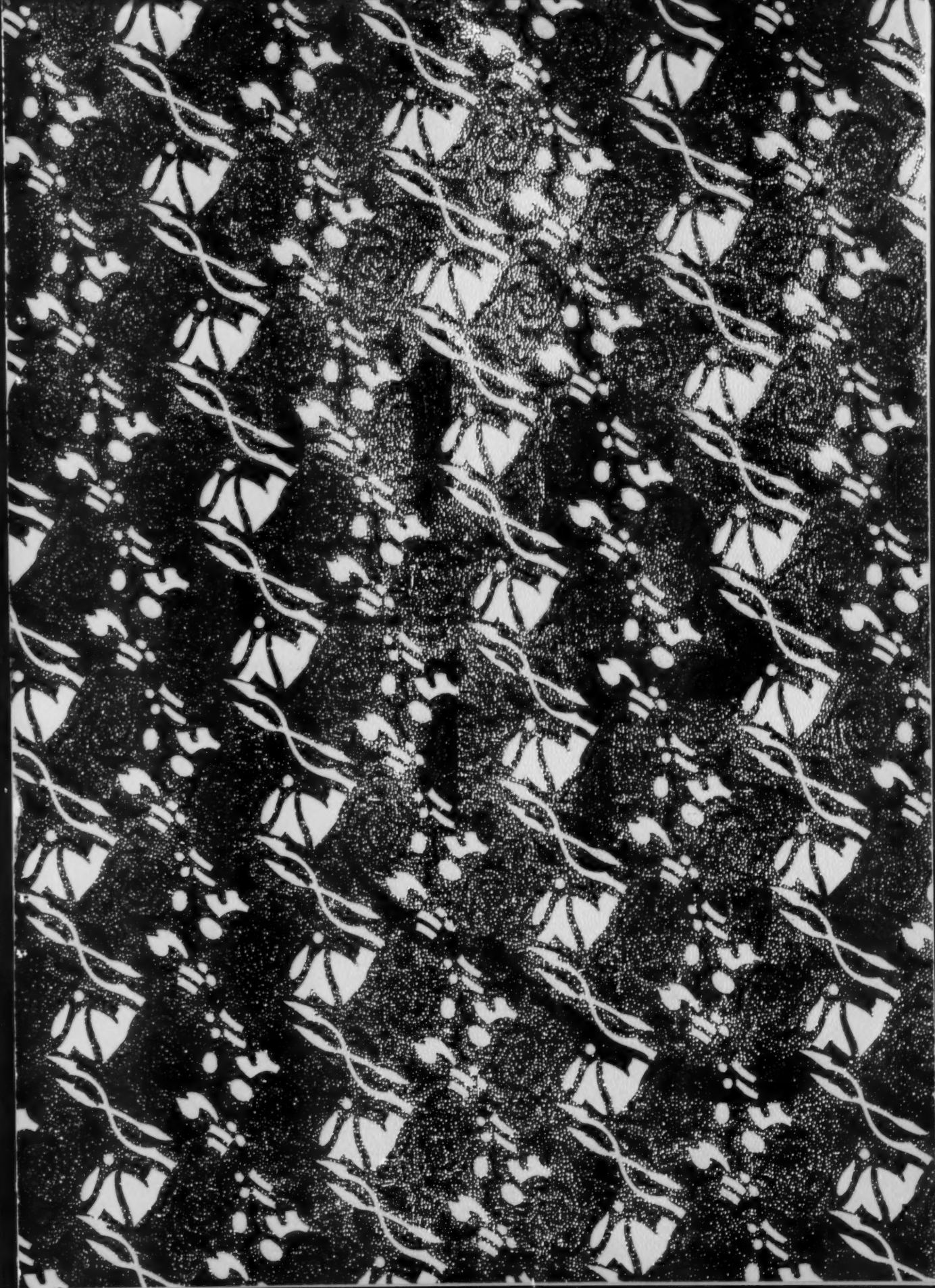
by

fisher's foils



FISHER'S FOILS LIMITED WEMBLEY MIDDLESEX ENGLAND
TELEPHONE WEMBLEY 6011 CABLES & GRAMS LIGNIT WEMBLEY (ABC CODE 6TH EDN)





★ *A Quality Product of* FISHER'S FOILS *of* LONDON, ENGLAND.

Throughout all stages of manufacture, every roll of foil made by Fisher's Foils of England is *automatically controlled* for gauge consistency by the latest beam gauge. Send today for wide range of samples or ask our representative to call.

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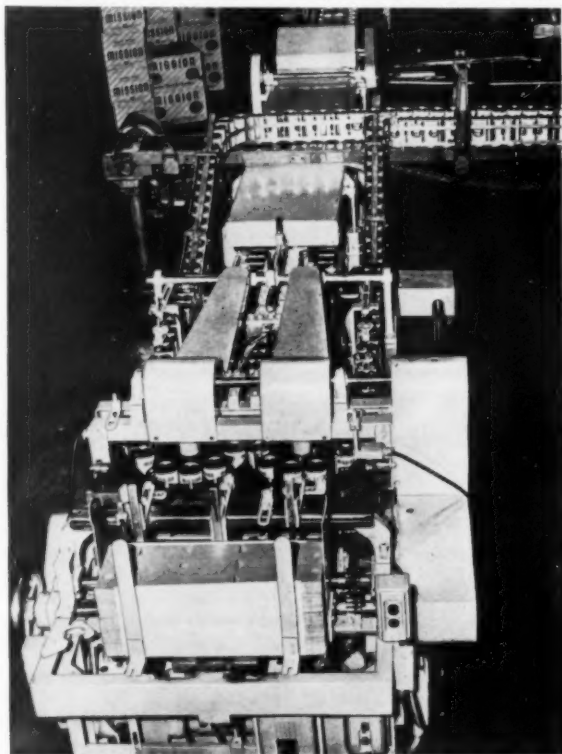
Equipment and materials

(This article continued from page 172)

blotter is used to absorb juices and the Plasket with chicken is overwrapped in the usual transparent film. Available colors are white, red, yellow, green and blue. The plastic baskets also have re-use value for the consumer.

A NEW CARRY-HOME PACK LOADER

has been announced by Morris Paper Mills, 135 S. LaSalle St., Chicago 3. Said to be capable of speeds up to 750 cans per



minute, it can handle packs ranging from 2-by-2 up to 2-by-6 in. in size. Wrap-around paperboard blanks are used to form the carry packs, with the finished packages having solid bottoms.

IMPROVED VCI-LINED CUSHIONED BAGS

that safeguard metal parts from rust and corrosion have been announced by Jet-Pak, Inc., 859 Summer Ave., Newark 4, N. J. The new bags have strong loop stitching on each side which gives added durability and forms an outside lip that acts as an extra buffer against shock.

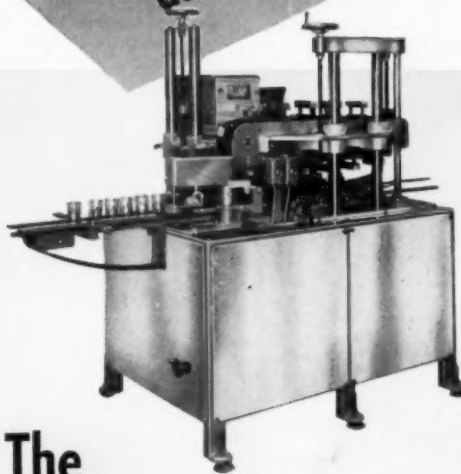
A NEW PLASTIC FILM SHEETER

and bag maker, introduced by the LectrOmatic Devices, Inc., 3349 W. Addison St., Chicago 18, automatically measures, cuts and dispenses all types of plastic film, cellophane, Pliofilm, polyethylene, paper and similar wrapping materials. Material is fed from roll stock. Flat sheets or tubular stock can also be used to make bags at a rate of 3,600 bags per hour, according to the company. The machine handles up to 22-in.-wide rolls and vends sheets or bags in 56 different lengths from 4 to 31½ in. The new LectrOmatic unit is reportedly simple to operate.

AN IMPROVED MARKING AND CODING MACHINE

for multiwall bags and shipping containers has been announced by the Industrial Marking Equipment Co., Inc., 454 Baltic Ave., Brooklyn 17. The improved Autoprinter is now completely auto-

Now... a brand new
concept in fully
automatic labeling



The

mrm

"Uni-Matic"

THE MOST VERSATILE
OF ALL LABELING MACHINES

Here are the exclusive features that
will bring your labeling costs down!

FLEXIBILITY—handles all sizes and shapes of labels and containers from fractional ounces to gallons.

VERSATILITY — handles both gluing and thermo-plastic labeling operations.

NO DOWNTIME — changeover from one size container to another only a matter of minutes.

NO EXPENSE — changeover parts at an absolute minimum. 90% less than other makes.

EFFICIENCY—Perfect registration on flat, curved and recessed surfaces. No oozing of glue whatsoever.

MAINTENANCE — Simple design and minimum adjustment eliminates need for skilled operators and maintenance help.

Truly the most revolutionary
labeler today!

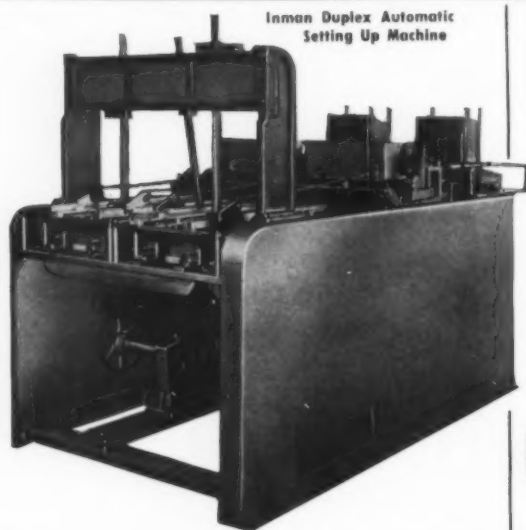
mrm

mrm company, inc.

191 Berry Street, Brooklyn, N. Y.

Set up boxes faster than ever

Up to 150 per minute



Inman Duplex Automatic
Setting Up Machine

SPECIFICATIONS

Depth	3/4" to 4 1/2"
Maximum Length	12"
Maximum Width	12"
Largest Blank	16" x 17"
Machine Speed	Up to 75 per minute
Production	Up to 150 pieces per minute
Floor Space	51" wide x 110" long
Weight	5200 pounds
Horsepower	2

Inexpensive tools for extra sizes available. Equipped with rotary gluers and completely adjustable forming well. One operator. If sizes beyond those specified are required, they can be accommodated by changes in design. Price and delivery on request.

Inman Manufacturing Company, Inc.

Amsterdam, New York

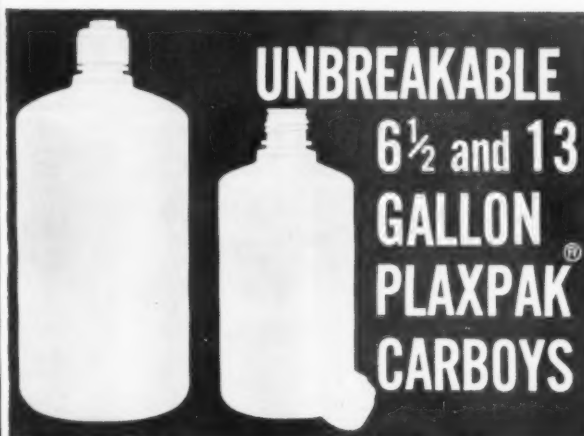
GUARANTEE

Any machine not meeting with the customer's approval may be returned within 10 days of the date received, freight prepaid.

- 1—Sheridan High Die Label Cutter, 18x32
 - 1—45 1/2" Hobbs Rotary Cutter and Scorer
 - 1—Wagner Offset Proofing Press, Power 42x60
 - 1—John Thomson Cutter and Creaser, 32x46
 - 1—44" Seybold Precision Cutter, #16454
 - 1—68" Oswego Auto. Cutter, Giant Frame
 - 25—Linotypes—5's, 8's, 14's, 30, 31
 - 8—42 pica, Intertypes—B, C, G-2, H's
 - 8—Harris and Web. Offsets, 17x22, 22x34
 - 12—Multis, 80—1200's—1250's—1327's—2066's
 - 5—Miehle Cylinders, Pony, #4, #2, #1
 - 3—Miehle Autos., Pony #4
 - 2—Miehle Verticals, V-36 and V-45
 - 6—Kelly Autos., Clipper, B, #1, #2
 - 20—Rice and Kluge Units, 10x15, 12x18
 - 5—Cleveland Folders, Model WF, O and B
 - 1—50" 10Z Seybold Auto. Paper Cutter
 - 1—50" Seybold Prec. Paper Cutter, #16352
 - 1—56" Seybold Prec. Auto. Cutter
 - #15659, Power Back Gauge
 - 1—40" Seybold Full Auto. 10Z
- Brand New Universal Tipping Carbon Machines at Greatly Reduced Prices
- 1—30 1/2" Challenge Hyd. Cutter, 3 yrs. old
 - 1—Standard #9 Embosser, 4 Poster, 3-draw leaf Pull, inking attach., electric
 - 1—Sheridan Arch Embosser, bed size 14 1/2 x 17 1/2 electric
- Demon Foundry Type in original packages
Linotype mats, Ludlow mats

Write, Wire or Phone COpley 7-5390

CRAFTSMEN MACHINERY COMPANY
75 WEST DEDHAM ST. BOSTON 18, MASS.



Bottles are Blow-Molded in ONE Piece of 100%, High Molecular Weight Polyethylene

A light-weight, non-breakable bulk container to reduce shipping costs and make safer, easier handling of hazardous, costly, corrosive chemicals. Approved by ICC for acid shipments, including hydrofluoric acid up to 60% strength.

Available for immediate delivery from our large warehouse stocks of jacketed and naked polyethylene carboys.

ADVANTAGES	
UNBREAKABLE	Longer life... Safer to handle... Economical.
SAFETY	Guards personnel and property from accidents and damage.
LIGHT WEIGHT	Lower shipping costs because less weight and cubic space... 55% less weight for empties and 20% less for full packages.
CHEMICALLY INERT	Suitable for shipping many corrosive liquids, such as hydrofluoric acid or caustic solutions... Excellent for handling or preservation of high purity distilled water, alcohol, aqueous and other solutions.
PACKING	6 1/2 gal.—6 bottles per carton. 13 gal.—4 bottles per carton. Also available in individual carton packing.

CONTACT US! We invite your inquiries.

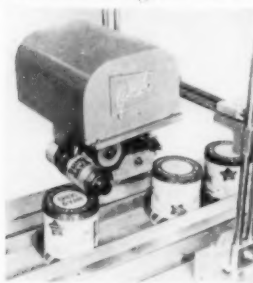
J. RABINOWITZ & SONS, Inc.
2 Hanson Place Brooklyn 17, N. Y.
Telephone STerling 3-0300

Equipment and materials

matic and its new design is said to remove all possibility of offsetting. Production rate has been increased up to 3,000 impressions per hour and smooth operation is maintained through the use of solenoid-controlled starting and magnetic braking.

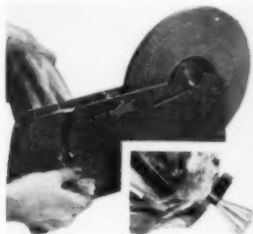
A NEW ATTACHMENT FOR IMPRINTING

the tops of cans, cartons and boxes with code dates and other identification legends has been developed by Adolph Gottscho, Inc., Hillside 5, N. J. Known as the Model 722 Rolaprinter, the machine is unusually small and is designed for production-line imprinting where other types of machines are not feasible. It is reported to insure an unusually high degree of printing quality and to register positions with great accuracy. Employing a flexographic printing system, the unit uses quick-drying inks and is equipped with variable-speed control. Under normal conditions, the company reports, replenishment of ink supply is necessary only once a day and daily clean-up of the machine can be accomplished in only a few minutes.



A NEW BAG-SEALING MACHINE

designed especially for sealing polyethylene produce bags with pressure-sensitive tape has been introduced by Better Packages, Inc., Shelton, Conn. This Nike bag sealer is a one-motion machine, with sealing accomplished with a single downward motion and the tape being automatically cut off at the end of the downward stroke. The machine handles regular 60-yd. rolls or large triple-size rolls in widths from $\frac{1}{4}$ to $\frac{1}{2}$ in. A peripheral tape-roll guide adjustable to the exact width of the tape being used centers the tape in the machine. Economy in use of material, the company reports, is assured by automatic, definite length cut-off of each sealing band.



ETHYLCELLULOSE SHEET AND FILM

is now available commercially from the Campeco Division, Chicago Molded Products Corp., 2717 N. Normandy Ave., Chicago 35. Called Campeco E-100, this film has high stability and toughness, a wide temperature range, a less volatile plasticizer and low moisture absorption, according to the supplier.

PLASTIC POUR-OR-SIFT TOP FOR METAL CANS

developed by the American Can Co., 100 Park Ave., New York 17, is a disk that fits snugly and flatly into the recess of a modified end of Canco's sanitary-type container and revolves easily to the desired position to open, sift, pour or close. The disk is held in place by an inward flanging of the double-seamed top edge of the can. It has two die-cut openings, one pie-wedge shaped and the other a cluster of small, round holes. After the can has been opened by a beer-can-type opener, it will pour bulky products, become a sifter and close tightly. The new device is reported to have proved successful when used experimentally on cans of powdered cream by the U. S. Navy. Products suggested as suitable



JUNE 1955

for PACKAGING PRINTERS



Complete services for producing monotone and full color commercial cylinders for packaging printers.

We invite your inquiries

ACME GRAVURE SERVICES, INC.

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CHESAPEAKE 3-1377

If it's a paper tube
MIDDLESEX MAKES IT

diameters
from 1/4"
and less—to
18" and larger.

- **CONTAINERS**
Metal and paper closures
- **SPECIALTIES**
Condenser tubes;
Socket Liners;
Reels; Spools
and many more.

**MIDDLESEX
PRESSED END
CLOSURES**

Automatic machine
production on 5/8" x
2 1/2" closures provide
economy dispensers for
many uses. Ask about
these and our new thermo
resin coatings.



**WRITE FOR
SAMPLES AND PRICES**

MIDDLESEX PAPER TUBE CO., Inc.
345 CHELMSFORD ST., LOWELL, MASS.

**Gluing or
Coating
Problems?**

**Let POTDEVIN
SOLVE THEM!**

If your problem is high speed
coating of paint, varnish, glue,
latex, etc. — POTDEVIN, with
sixty years experience in coat-
ing equipment design is sure
to come up with the solution.

Illustrated is
just one of hundreds of spe-
cial machines. It automatically
labels cylindrical paper tubes.
Hundreds of machines avail-
able that were designed for
special industry applications.

**Let us know your problem. We either have
or will build the machine for you.**



POTDEVIN MACHINE CO.
244 North Street • Teterboro, N. J.

*Designers and manufacturers of equipment for Bag Making,
Printing, Coating, Laminating, Gluing and Labeling.*

Equipment and materials

for packing in metal cans employing the disk are grated
cheese, popcorn, aspirin, vitamins, grass seed, bath salts, pow-
dered cleaners, glue, whole spices, etc. The patented disk can
be had in a variety of colors.

ECONOMICAL PACKAGING OF SAMPLES

of powders, tablets and capsules is reported by Printon Corp.,
304 E. 23 St., New York 10, by the new "Printolam Method,"



which is said to combine fine quality rotogravure printing on
film and the development of a special
laminating process. The Printolam
laminating process combines two or
more films in varying combinations.
Typical laminations are Pliofilm with
acetate, vinyl with acetate or Plio-
film, and saran with Pliofilm, and
other film combinations—including
aluminum foil. One side of the film
is rotogravure printed in as many
colors as desired. The film is then
folded so that the printed message
is both front and back. Placement
of the product is made on transparent
areas and sealed by heat crimping
to form a tightly sealed package.

The method is reported to be par-
ticularly suited for mass-production packaging in strip form for
capsules, tablets, powders, creams, lotions, etc.

A PRICE REDUCTION OF POLYESTER FILM

has been announced by E. I. du Pont de Nemours & Co., Wil-
mington, Del. All types and gauges of Mylar polyester film ex-
cept 25 gauge, the thinnest film, have been reduced 35 cents
a pound, making the price range \$2.50 a pound for heavier
films to \$4 for the 25 gauge.

A NEW POULTRY POUCH

known as Mil-O-Film has been introduced by Milprint, Inc.,
4200 N. Holton St., Milwaukee 1, Wis. The new film eliminates
hot-water dunking and shrinking of film, thus saving labor
and equipment. Packag-



ing is a speedy, easy,
three-step process. First
the bag is stretched with
a stuffing horn and the
bird inserted. When
tension on the pouch is
released, it snaps back
and form fits around the
fowl. On removal from
the stuffing horn, the
package is ready for
vacuumization and tie-
off. Less material is used by this method than with the shrink-
type package, according to the supplier, thus cutting down on
material usage. Other advantages claimed for the new package
are: birds go into the freezer dry; the film does not tear or
shatter even at 65 deg. F. below zero.

A NEW POLYETHYLENE RESIN

announced by the Bakelite Co., a Division of Union Carbide
& Carbon Corp., 260 Madison Ave., New York 16, designed
for thin film extrusion, is reported to achieve good slip without
loss of clarity and has an impact strength at least equivalent
to that obtained with other polyethylene resins. The new resin



Packaging
flattery in
BEETLE® Plastic

... a sleek pink container for Du Barry Sophisticreme

... a pink bonnet of a cap for Du Barry bottles

BEETLE has great powers of persuasion! It flatters the product, of course...and also the manufacturer, the retailer, and the consumer.


BEETLE is as practical as it is rich in appearance. It molds easily and economically—in shapes simple or intricate,

in pastels or bright, strong colors. It's both strong and light. It resists most chemicals and solvents. And the cost of BEETLE is lower than you might think!

That's why so many packagers of cosmetics and pharmaceuticals have found...you can't beat BEETLE!



Caps and cases of BEETLE—in pink, green and white—molded for Richard Hudnut's Du Barry line by: Mack Molding Co., Norton Laboratories Inc., Terkelson Machine Co.



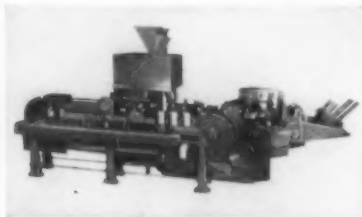
AMERICAN Cyanamid COMPANY

PLASTICS AND RESIN DIVISION

32C Rockefeller Plaza, New York 20, N. Y.

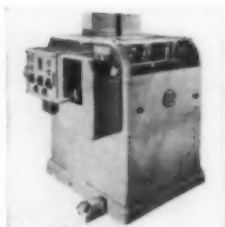
In Canada: North American Cyanamid Limited, Toronto & Montreal

New FRENCH PACKAGING MACHINERY ENTERS THE AMERICAN MARKET

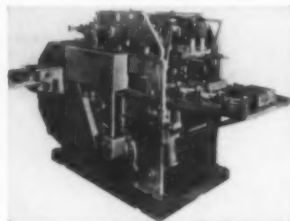


▲ Automatic weighing, filling and carton-forming machine for various bulk products. Type P.P.G. Output: 40 to 60 boxes per minute.

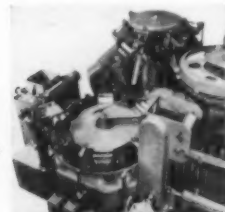
Automatic machine for two-stage feed, bulk and final-weight, feed of macaroni, spaghetti, vermicelli, etc. Type P.P.L. Output: 18 to 20 weighings per minute.



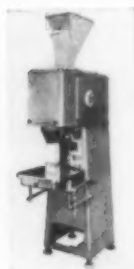
Automatic carton bundling and wrapping machine. Type F.A. 1. Output: 9 bundles per minute.



Automatic machine for making and filling triangular containers. Type P.P.V.T.



Automatic, high precision and fast-output, vibration-feed weighing machine for coffee, rice, sugar, and other granular products, as well as bulk items such as candy, biscuits, buttons, and small metal parts. Type P.S.A.



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. . . exclusive sales representatives

Equipment and materials

is modified internally to control slip. Film made from the new resin makes possible faster through-put plus a more continuous operation, the company reports. It has a coefficient of friction lower than regular polyethylene film and is said to be easier and more economical to handle in conventional bag-making and other packaging machinery.

A NEW POLYETHYLENE WAX

known as Epolene, was displayed at the recent Packaging Show by Eastman Chemical Products, Inc., 260 Madison Ave., New York. This inexpensive, convenient-to-use synthetic wax is suggested for application in melt coatings



of the kind used on bread wraps, milk cartons, etc. It is available in small pellet form about the size of a grain of rice, which accelerates the melting-down process, and is packaged in easy-to-handle 50-lb. bags. The new wax is available in two forms at present: an emulsifiable type known as Epolene-E and a non-emulsifiable type known as Epolene-N. Both forms are compatible with all commonly used animal, vegetable and mineral waxes, with the exception that Epolene-N is incompatible with certain of the components of candelilla and ouricury. When used in mixtures of basic paraffin for melt coatings, according to Eastman, Epolene increases block resistance, resistance to water-vapor transmission and hardness; it has a high melting point, is very flexible and has high dielectric properties. An outstanding property is its ability to plasticize other waxes.

Eastman Chemical Products has also introduced a new form of half-second butyrate for heat-seal applications in convenient powder form.

NEW HAND-OPERATED MARKING UNIT

called the Dri-flo Roll-A-Matic printing wheel, announced by Force Western, Inc., 216 W. Jackson Blvd., Chicago 6, is designed for fast, economical marking of boxes, cartons, shipping cases, etc. It measures only 2½ in. wide and 8 in. around and weighs only 23 oz. It is simple to operate. The marking is rolled off, then the unit is lifted off. The roller automatically positions itself for the next impression. No pressure is needed and all impressions are said to be uniform. If desired, the automatic return may be easily disengaged for continuous rolling. The rollers will hold sufficient ink for thousands of impressions. Base-lock interchangeable type is used on the unit.



DECORATIVE AND IDENTIFYING MARKING is said to be possible simultaneously with the Model 25AC machine introduced by Markem Machine Co., Keene 50, N. H. According to the manufacturer, the new machine will print trade name, trademark or other design and complete identifying information on box ends at rates up to 75 per minute. A slide-in master plate is used to imprint the design, with size, style, stock number or other identification being printed by means of rotating-type wheels.

DECORATIVE AND IDENTIFYING MARKING

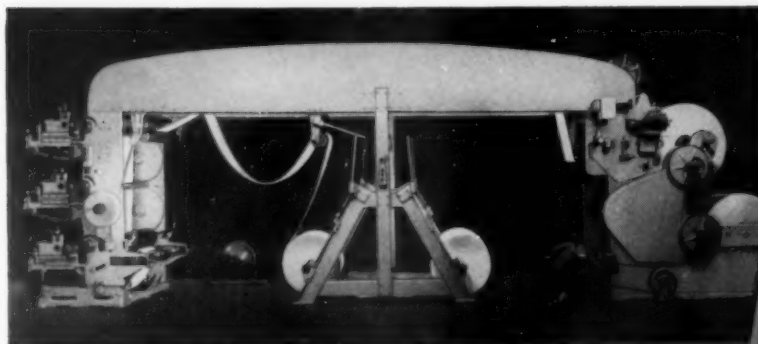
is said to be possible simultaneously with the Model 25AC machine introduced by Markem Machine Co., Keene 50, N. H. According to the manufacturer, the new machine will print trade name, trademark or other design and complete identifying information on box ends at rates up to 75 per minute. A slide-in master plate is used to imprint the design, with size, style, stock number or other identification being printed by means of rotating-type wheels.

A NEW DRAW-OFF-SEAL ATTACHMENT

has been added to the Auto-Ampak ampoule filling and sealing machine to give a draw-off seal rather than the older type of tip seal. According to the British manufacturers of the machine,

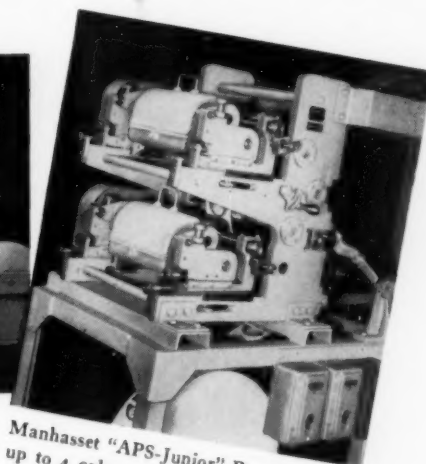
Make your next flexographic press a modern **MANHASSET**

Big or small . . . we build 'em all



Manhasset "APS" Press . . . prints up to 6 colors on webs up to 60" wide.

For multicolor roll-to-roll printing, coating, tinting of any flexible packaging material . . . choose a modern MANHASSET FLEXOGRAPHIC PRESS. Engineered to deliver high-volume production and critical precision quality, MANHASSET presses incorporate many new advance-design features that assure first-class printing and maximum performance efficiency. Available in any size for printing cellophane, polyethylene, foil, tissue, kraft, box-board, other films and papers . . . in 1 to 6 colors . . . on any web width to 60".



Manhasset "APS-Junior" Press . . . prints up to 4 colors on webs up to 12" wide.

Write,
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phone
for
details

MANHASSET

MANHASSET MACHINE CO.

Mineola, New York

REBUILD TO RUN . . .

THE NEW PLASTIC FILMS

We modify
packaging and converting
machinery to handle

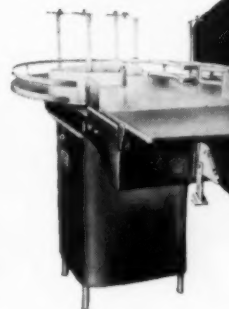
Saran film

and other electronically
welded films.

Our P75 electronic generator is
designed for automatic HIGH
SPEED packaging machinery.

*May we have details of your
special problem?*

FREDERIC A. RICHTER
Electrical Engineer
1220 North State Street
CHICAGO 10, ILLINOIS



Makes
**ROUND BOTTLES, JARS,
CANS, CONTAINERS**
Get in Line!

Styl-O-Matic
ROTARY
UNSCRAMBLING
TABLE

• Cartons of bottles, jars, cans or containers are inverted on to the tilt top table and their contents pushed onto the revolving disc. Units are automatically regimented and despatched in single file to the conveyor.

LOWERS HANDLING COSTS — ACCELERATES PRODUCTION

• Conveyor carries units to other operations such as filling, capping, labelling, etc. Handles up to 100 units per minute depending upon diameter.

MAIL THIS COUPON FOR FULL DETAILS

FREE!

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Long Island City 1, N.Y.

Please send particulars on the Styl-O-Matic
Rotary Unscrambling Table.

COMPANY.....

BY.....

ADDRESS.....

CITY.....STATE.....

The versatile "Oliver" saves more because it does more

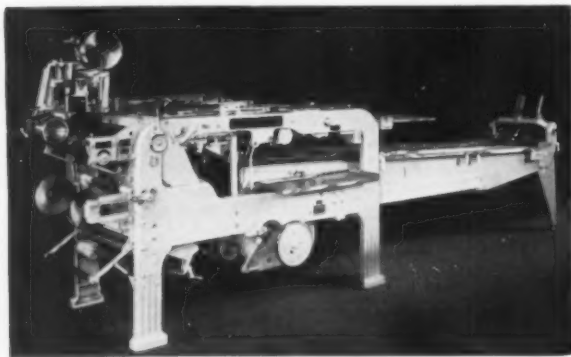


Textiles, baked goods, paper specialties, bacon, frankfurters. If your product is remotely similar to any of these, an "Oliver" will give you fine packages at low cost. Using cartons, trays, U-boards, cards, or without supports, it neatly wraps and securely heat or glue seals your product for utmost protection. It also heat seals a smart label to the package. "Oliver" quick adjustability means less down-time. Each of 8 models handles packages in a wide range of sizes—speeds up to 50 a minute. Infeed conveyors 6 to 15 feet long. Printed wrappers registered by an electric eye. "Oliver" features will save you dollars daily. Write for details.



"OLIVER" ROLL-TYPE LABELING SYSTEM

Automatic Labeler heat seals a roll-type label (printed by Oliver) to the wrapper. Label can be imprinted with essential information just before it is applied. Imprint items changeable in a few seconds. Labeler—with or without Imprinter—can be attached to other makes of wrapping machines. Get all the facts.



"Oliver" Wrapping Machine

with Automatic Roll-Type Labeling System

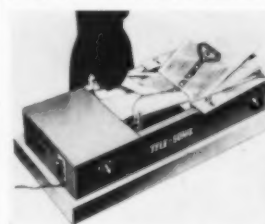
OLIVER MACHINERY COMPANY · GRAND RAPIDS 2, MICH.

Equipment and materials

Autopack Limited and Automatic Weighing & Packing Machine Co., Caroline St., Birmingham 3, England, the attachment is simple in operation and waste glass is disposed of down a special chute. The attachment can be supplied separately for fitting on existing Auto-Ampaks or new machines can be supplied with the draw-off-seal attachment built in.

A NEW AIR-CONTROL REGULATOR

is the newest feature of the portable bagging machines made by the Tele-Sonic Packaging Corp., 1170 Broadway, New York 1.



The manufacturer claims that all packaging speed records for hand-assist packaging are broken in the bagging of soft, semi-soft and rigid products with these bagging machines, with speed-ups reported as high as 1,000 an hour over former baggings. Only one operator is required to step up production. The air-control regulator is reported to overcome problems in

having different-sized bags blown open at improper positions for speed filling. Flat-cut bags open with an easy "thumb" assist, lip bags open automatically and skin-tight bagging fits can be secured, according to the company. Machines are available for horizontal, semi-vertical and vertical position packaging. Other improvements in the Tele-Sonic machines allow for greater adaptability in resetting the unit for various products and different bag widths.

GLUE-PREPARATION EQUIPMENT

known as Visco-Mat is now being distributed by the Coating Machine Div., Potdevin Machine Co., 285 North St., Teterboro, N. J. This line of equipment automatically combines dry glue



with water to maintain a steady supply of constant-viscosity glue for the gluing machinery manufactured by Potdevin. Water and dry glue are automatically fed into the machine. A simple dial setting adjusts the viscosity of the finished glue. A flick of a switch keeps the Visco-Mat replenished, so that it will feed a whole battery of coating or gluing machines without any down time, according to the company. Capacity ranges from 5 to 40 gal. an hr., depending on the characteristics of the dry glue. Cleaning is required only when changing to a different type of glue.

Also available from the Potdevin company is a Visco-Mat for dilution of heavy liquid adhesives.

A NEW SEMI-AUTOMATIC HEAT SEALER

with a single sealing length of 27 in. has been added to the Comet 54 series of heat-sealing machines produced by Product Package Engineering, 5747 Marilyn Ave., Culver City, Calif. Designed for commercial and military packaging at high speed, the Model 5427 machine seals coated or laminated materials, according to the company, regardless of wrinkles or splices in the material to be sealed.

An automatic tripping device controls the heat-sealing cycle and only simple preliminary hand settings for time, heat and pressure are required, the manufacturer reports. Seal width may vary from 1/4 to 1 1/2 in.

Dimensions of the machine are 28 in. long, 11 in. deep, 13 in. high and it weighs 49 lbs.



Now . . . every dry product can afford sparkling glass containers . . .

KIMBLE OPTICLEAR SHELL VIALS

Designed and priced for mass packaging

You can give your dry products the sales advantages of a sparkling-clear glass container—*no matter what your cost requirements*. Kimble Opticlear Shell Vials is the new vial line designed, produced—and priced—to make it practical and economical for packaging almost any dry product.

These new Kimble Opticlear Shell Vials have crystal-clear clarity, gleaming beauty, unusually

high moisture-vapor resistance. New Kimble Opticlear Shell Vials are light and sturdy. The sparkling clarity of the glass provides perfect vision of contents, permits labeling either inside or outside.

New Kimble Opticlear Shell Vials have special, resilient, plastic stoppers to keep contents fresh and clean . . . free from dust, dirt and moisture. Even after stoppers

are removed and replaced repeatedly, they re-seal tightly . . . are always easy to use.

If you are using an ineffective package, you can afford to switch to these new Kimble Opticlear Shell Vials. Write now and we'll send you information, prices and free samples of the sizes you use. Kimble Glass Company, subsidiary of Owens-Illinois, Toledo 1, Ohio.

New Kimble Opticlear Shell Vials are available in 1, 2, 3, 4, 5, 7, 10, and 12-dram sizes. Polyethylene stoppers are hollow, providing more room for contents.

KIMBLE OPTICLEAR SHELL VIALS
AN **(I)** PRODUCT

OWENS-ILLINOIS

GENERAL OFFICES • TOLEDO 1, OHIO

Plants and people

Stanley J. McGiveran has been elected first vice president of **Ace Carton Corp.**, Chicago, and president of **Ace Folding**



S. J.
McGiveran



W. E.
Foster



R. E.
Mitchell

Box Corp., White Pigeon, Mich., a subsidiary. **Wallace Foster, Inc.**, is now the representative for Ace Carton in the Eastern area. **Wallace E. Foster** will continue his own display activities and supervise Ace Carton's sales in the area. **Robert E. Mitchell** has joined Ace Carton and will also act as vice president of the Foster organization. **Arthur Biles** has been made Ace representative for the Philadelphia, Pittsburgh and Baltimore areas.

Eugene D. Cooper has joined **Western Package Products Co.**, Pasadena, Calif., in its converter sales department.

Herbert H. Clarke, Jr., has been made executive vice president of the **Chemical Div.** of the **Borden Co.**, New York.

Ray I. Mitchell has been promoted to sales manager of **Vulcan Steel Container Co.**, Birmingham, Ala.

Jack T. Hohnstine has been elected a vice president in charge of product research and development for **Boyle-Midway, Inc.**, New York.

Container Laboratories, Inc., Chicago, has appointed **James J. Larkin** as director of quality testing.

The General Printing Ink Co., Div. of **Sun Chemical Corp.**, Long Island City, N. Y., plans to expand its ink plant in Clearing, Ill.

The Can Div., **Crown Cork & Seal Co., Inc.**, Baltimore, Md., has promoted **John R. Stanley** to sales representative in the New York area.

George Dusterdieck has been placed in charge of the General Line Div. of **Thatcher Glass Mfg. Co., Inc.**, Elmira, N. Y. **William R. Rifenburgh** is now sales manager of the Liquor & Wine Div., formerly a part of Thatcher's General Line. The Beer & Beverage Div. has been separated into two groups, with **Lyle F. Hardner** managing the Carbonated Beverage Div. and **Walter S. Bassett** sales manager of the Beer Div. **Samuel E.**

O'Connell has been made manager of a newly created merchandising department of Thatcher. Assistant merchandising manager is **John T. Pollock**.

W. L. Stensgaard & Associates, Inc., Chicago, has expanded its sales force with the appointment of the following: **John Bopp**, field service manager; **Glenn Stangeland**, junior account executive; **William F. Sullivan**, field representative in New England, upstate New York and central Pennsylvania; **Henry Hess**, field representative in the Southwest; and **Harold Milner**, representative in northern Illinois.

National Starch Products, New York, has appointed **Dr. Carlyle G. Caldwell**, **John F. Fitzgerald**, **Dr. Robert W. Merritt** and



J. F.
Fitzgerald



Dr. C. G.
Caldwell



Dr. R. W.
Merritt



S. F. Thune

as vice presidents. **Dr. Caldwell** had been assistant vice president in charge of research. **Mr. Fitzgerald** was formerly assistant vice president in charge of starch sales. **Dr. Merritt** has been serving as assistant vice president in charge of manufacturing, while **Mr. Thune** has been an assistant vice president since 1951.

Alexander Chaite Studios, Inc., New York, has appointed **W. Freeland Dalzell** vice president. He will be executive associate to **A. E. Chaite**, president.

Don J. Whitmore, **Inland Container Corp.**, Indianapolis, Ind., has received the distinguished salesman's award from the Indianapolis Sales Executive's Council.

Richard Latham, **Robert D. Tyler** and **George Jensen**, former executives of **Raymond Loewy Associates**, have established the industrial design firm of **Latham, Tyler, Jensen**, with offices at 700 N. Michigan Ave., Chicago 11.

Signode Steel Strapping Co., Chicago, has acquired all patents and licensing agreements of the **Addison-Semmes Corp.**, Racine, Wis., for the manufacture of expendable fibreboard pallets. **Signode**

will establish a new department to handle the sale and development of the products, to be known as **Signode Addison-Semmes Pallets**. **Ray E. Frase**, **Addison-Semmes** vice president, will act as consultant with **Signode** on sales and technical matters.

Milprint, Inc., Milwaukee, Wis., has named **John C. Farley** manager of its Produce Packaging Div. **James A. McFaul** and **Richard E. Morrison** have joined **Milprint's** sales staff. **Mr. McFaul** will work out of San Francisco, while **Mr. Morrison** will locate in New Jersey.

Francis S. Webster, Jr., has been appointed sales manager of **The Woodman Co.**, Decatur, Ga. **Mr. Webster** will direct the activities of the company's 12 branches in the United States and Canada.



F. S.
Webster, Jr.

Replacing **Mr. Myers** as technical director of the company will be **Ferris M. Stout**.

B. Franklin Conner has retired as president of **Colt's Mfg. Co.**, Hartford, Conn. **Mr. Conner** joined the firm in 1924.

James B. Andrews has been appointed sales manager of **Sherman Paper Products Corp.**, Los Angeles.

The Laminating Div., **Cochran Foil Co.**, Louisville, Ky., has appointed **Frederick G. Howe** as manager of foil board sales. His headquarters will be in New York.



F. G. Howe

William H. Cook has been appointed assistant sales manager of the steel strapping division, **The Stanley Works**, New Britain, Conn.

J. Stuart Towers has been made sales representative for the division in Southwestern Connecticut.

St. Regis Paper Co., New York, has reached an agreement to acquire **Pollock Paper Corp.**, Dallas, Tex.

St. Regis is installing a new kraft paper and board machine at its mill at Jacksonville, Fla., and one at its mill at Tacoma, Wash.

Justin H. McCarthy, chief engineer of the pulp and paper divisions of **St. Regis**, has been named vice president. The following have been made assistant vice presidents: **John K. Ferguson**, **William W. Gordon**, **Gardiner Lane**, **Bernard W.**

"Okay...how do you pronounce it?"



Lots of people
stumble over our name.

But just so you'll know,
HINDE rhymes with "find"...
and DAUCH is pronounced "dowk."
And any way you say it,
it stands for quality in
corrugated boxes.



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actual sample
of **NASHUA
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informative
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"for packages of distinction..."

**NASHUA
CORPORATION**
Nashua, New Hampshire
40 Years of Creative Packaging

Plants and people

Recknagel, Andrew F. Storer and Charles A. Woodcock. St. Regis has appointed J. W. Hartung as manager of the purchasing department. W. H. Monje has been named assistant manager.

Riegel Paper Corp., New York, has increased the coating area at its Milford, N. J., plant by about 75% with the addition of a coating tower.

Fritz C. Hyde, Jr., has been appointed sales manager of the Standard Rolling Mills Div., Revere Copper & Brass, Inc., New York. Mr. Hyde succeeds the late Leo F. Supple.



Wyndmoor Mfg. Corp., Newark, N. J., is nearing completion of an expansion program, which includes the construction and installation of new and complete laboratory and manufacturing facilities.

Crown Zellerbach Corp., San Francisco, is now producing polyethylene-coated papers of various types at its Western Waxed Paper Div., North Portland, Ore.

The Riverdale Plastic & Chemical Corp., Culver City, Calif., has been named West Coast representative for Poly-Eth polyethylene manufactured by Spencer Chemical Co., Kansas City, Mo. Riverdale Plastic will also have the sales services of West Coast Plastics Distributors, Los Angeles, which markets machinery and equipment to the plastics industry.

Gale V. Clough has been appointed to a sales and engineering capacity at Peters Machinery Co., Chicago. He will work with packagers in effecting efficiency and economy in packaging operations.

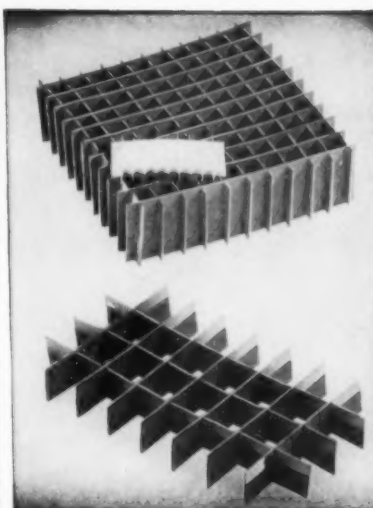


The Sherwin-Williams Co., Cleveland, Ohio, has broken ground for a can-manufacturing plant at San Leandro, Calif. The plant will have 75,000 sq. ft. of floor space.

William E. Zimmermann has been appointed vice president in charge of sales for the Rap-In-Wax Paper Co., Minneapolis, Minn.

The Dilts Machine Works, Div. of the Black-Clawson Co., has expanded the facilities of its converting laboratory at Fulton, N. Y.

Dilts has engineered a converting-



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Solve YOUR
Internal Packaging Problems
SAFELY—SECURELY!

Made to Your
Exacting Specifications
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CO., INC.**

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Evergreen 8-2512-3-4

(Formerly at 169-173 Franklin Ave.)



MODERN PACKAGING

machine line to manufacture polyethylene-coated papers for the **Guardian Paper Co.**, Oakland, Calif.

Kraft Bag Corp., New York, has appointed **John P. Witter** representative in North and South Carolina and Virginia.

Ralph E. White has been elected a vice president of **Container Corp.**, of America, Chicago.

Production of corrugated and fibre shipping containers has begun at **Container Corp.**'s new plant at 2601 S. Malt



Ave., Los Angeles. The plant, which has a production capacity of 4,000,000 sq. ft. a day, is the company's third in the Los Angeles area.

Dewey & Almy Chemical Co., Div. of **W. R. Grace & Co.**, Cambridge, Mass., has appointed **John W. Harrison** as Cryovac field development manager. **William S. Hardin** has been made Cryovac district sales manager in Chicago. **Dewey & Almy** plans to open a new plant in Sao Paulo. The Brazilian subsidiary, to be called **Produtos Quimicos Darex Ltda.**, will produce various sealing compounds. Directors of the new company are **H. L. Gilbert** and **Leslie Ide**, who will also serve as general manager.

The **Sylvania Div.**, **American Viscose Corp.**, Philadelphia, plans to construct a new warehouse in the Los Angeles area



M. G.
O'Connor

to service cellophane users on the West Coast. **Matthew G. O'Connor** has been promoted to West Coast district sales manager and **L. E. Nash** has been made sales representative for converter accounts serviced on a direct basis during the past year. On completion of the warehouse, the Sylvania West Coast sales office will be moved to the new building.

John M. Wells has been appointed Boston district sales manager for the Sylvania Division. He succeeds **Henry W. Dearborn**, whose resignation from Sylvania becomes effective July 1.

Jacob C. Fisher, former vice president of the **Benjamin C. Betner Co.**, Devon, Pa., and assistant plant manager of the Devon plant since the company's merger with the **Continental Can Co.**, retired on April 30. Mr. Fisher was one of the founders of the **Betner Co.**

The Indianapolis Sales Div., **Bemis Bro. Bag Co.**, St. Louis, Mo., has appointed the following sales supervisors: **U. E. Philpott**, Indiana and Ohio; **R. C. Thomas**, Detroit sales office and Michigan; and **F. H. Schardt**, Kentucky. **H. F.**

(Continued on page 192)

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can

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SUPERIOR CUSHIONING
PADS & BLANKETS
and save money, too!

PROTEX pads and blankets give you the maximum interior cushioning protection obtainable and fit virtually any product or assortment you can name! The cost is substantially lower than most other forms of interior cushioning and take only a fraction of the time to pack. Avail yourself of this important money-saving clean method of packing. The protection your products get is superb...resists all forms of shock and protects the finish of the product as well. Ease of packing, availability of ample supplies of packing material on hours notice are important too...you don't have to order far in advance of production or store supplies all out of proportion to their rate of consumption.

Consult us—Present your packing problems to us for complete package engineering design and service by experts. We will show you how to improve package performance and save money too!

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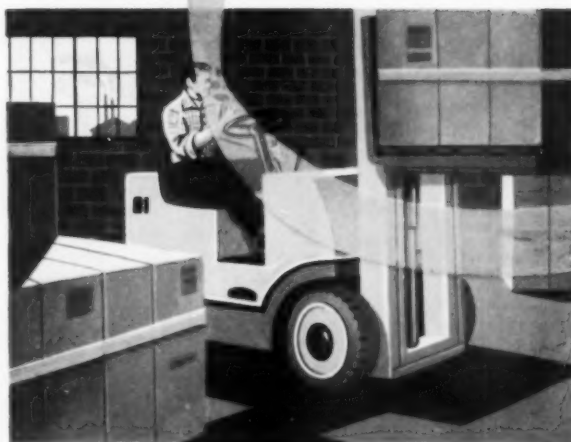
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U. S. Holdtite are the amazing wonder-working pressure-sensitive tapes for packaging! Applied with just finger pressure, they bind, hold, mask, reinforce, protect and serve as an indispensable tool for hundreds of uses. They are so much a part of the packaging field that the wonder is how packaging ever got along without this wonder-worker line. Well-named, too, because once applied, a U. S. Holdtite tape will never come loose by itself; it must be removed. *It's a tape line that's respected by all packagers everywhere and is the only tape line that will do so much, so well.* Order U. S. Holdtite tapes from your distributor or from any of our 27 District Sales Offices.



U. S. Holdtite pressure-sensitive tape holding packages on pallet.



U. S. Holdtite Tape is ideal for special promotions, such as banding two items together. Once applied, they are joined securely.



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U. S. Holdtite sealing the lids of chemical fiber drums.



U. S. Holdtite is used by food packers as an airtight seal on bumpy, uneven packages.



U. S. Holdtite holds so strongly it can easily support a full-grown man in a sealed container.



U. S. Holdtite is used by appliance makers to hold products in place and protect costly surfaces during shipment.

Style #501—Crepe paper back. Strongest crepe backing on the market. So flexible it is the one right tape for all curve work. No "feather edge" when used for painting. Strips clean—won't flake or break. Takes up to 200 degrees temperature.

Style #511—Flat paper back. Has TWICE the strength of conventional masking tape. Ideal for straight line masking, also for binding, bundling, and sealing.

Style #503—Crepe paper back. For high temperature baking operations. Takes up to 300 degrees temperature for 1½ hours. A favorite tape on original equipment items.

Style #508—Paper-backed glass filament reinforced tape with

240-pound tensile strength. The one right tape for strapping and sealing cardboard cartons. Will not work loose. An extremely powerful adhesive that makes tampering and pilfering impossible to conceal. A single strand will hold boxes piled up on a skid.

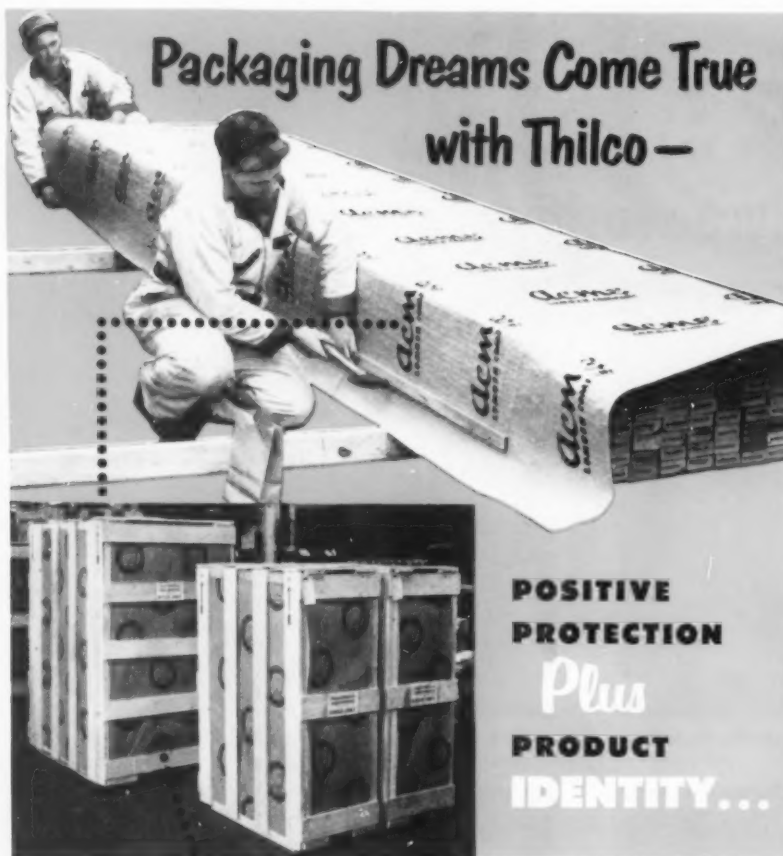
Style #601—Waterproof cloth tape with plastic coated back. Perfect for waterproof sealing, masking, protecting anything that will be exposed to the weather.

Style #604—An ideal low-cost cloth "expendable" tape for one-time use...protecting tool edges and fittings, bundling parts, keeping wrappings on toys, guarding fragile wood from splitting while being sawed.

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**PRINT
 DECORATED**
 Thilco
 Functional
 papers,
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at very little extra cost!

No matter what your product — there's a Thilco paper that will wrap it best. But that's not all. These papers can be **PRINT-DECORATED** for immediate identification and powerful sales impact.

ADVANTAGES FAR OUTWEIGH COSTS — Thilco **DECORATED** papers actually cost but a fraction more than plain papers, yet, *work twice as hard for you!* They advertise your brand name to vast new audiences, enhance company prestige, provide easier inventory control and when printed with use or assembly instructions, content analysis, etc. you save considerably by eliminating need for costly inserts, and other printed pieces.

SIZE IS NO PROBLEM — Most Thilco papers are made in widths up to 10' wide without lap or seam (an important protective factor in itself). Nearly all of them can be **over-all PRINT-DECORATED** — not just "spot" printed.

LET THILCO HELP YOU — Send us your wrapper requirements. Our "Paper Imagineers" will study them carefully, then send you closely aligned samples and suggestions.

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Functional Papers FOR PROTECTION THAT COUNTS!

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 CINCINNATI
 DETROIT • MINNEAPOLIS

THILMANY PULP & PAPER COMPANY
 KAUKAUNA • WISCONSIN

Plants and people

(Continued from page 189)

Wilson will move from Detroit to Indianapolis as assistant to **A. C. Greer**, sales manager. **E. G. Harvey** will become plant merchandiser for the Indianapolis plant. **J. A. Davies** has been transferred to Grand Rapids and **F. L. Ashinger** will serve in Detroit. **F. W. Ayers** has been made sales manager of the Vancouver, Wash., multiwall bag plant. **R. J. McDonald** has been named sales manager for the company's Packaging Service Dept. in Minneapolis.

O. J. Ogle has been appointed sales manager for **Inta-Roto Machine Co.** and the



O. J. Ogle

Inta-Roto Engraving Corp., Richmond, Va. Mr. Ogle was formerly with **Continental Can Co.** and **Shellmar-Betner**.

R. D. Cleaves has been appointed products sales manager of meat and non-

processed food cans for **Continental Can Co.**, New York. He replaces **C. W. MacArthur**, now manager of the Washington, D. C., office.

Paterson Parchment Paper Co., Bristol, Pa., has elected **Arthur L. Smith** vice



A. L. Smith

president in charge of sales and re-elected him to the board.

Blum Folding Paper Box Co., Inc., now celebrating its 50th anniversary, has moved to a new plant at Valley Stream, Long Island, N. Y. The new plant

has over 125,000 sq. ft. on one floor.

Product Packaging Engineering, packaging machine manufacturer, Culver City, Calif., has formed a **Contract Packaging Div.** to specialize in protective packaging of small industrial products.

Bakelite Co., Div. of **Union Carbide & Carbon Corp.**, New York, has completed a new plant at Ottawa, Ill., which will more than double production of its **Krene vinyl cast film**. The new plant makes the film available in widths up to 48 in.

Package Machinery Co., East Longmeadow, Mass., has been appointed agent for the candy-making equipment of **Forgrove & Baker Perkins, Ltd.**, Peterborough, England.

Phillips Petroleum Co., Bartlesville, Okla., has announced that **Phillips Chemical Co.**, a subsidiary, will construct a large plant

MODERN PACKAGING

near Pasadena, Tex., to produce its polyethylene and a 145-million-pound-per-year ethylene plant near Sweeny, Tex. The two plants and the pipeline between them represent a multi-million-dollar investment. Marlex is to be made by the Phillips-developed low-pressure catalytic process announced a year ago. The material reportedly does not become brittle at temperatures as low as 175 deg. F. below zero and does not soften or deform at steam-sterilization temperatures as high as 250 deg. F. The process will be licensed to others in the near future.

The Ralph Chaffee Co., San Francisco, will open new offices at 1046 S. Olive, Los Angeles, with William W. Hints as sales manager.

Hinde & Dauch Paper Co., Sandusky, Ohio, has appointed Paul E. Kell as Wisconsin representative.



R. J. Rodgers

R. J. Rodgers has been named to head manufacturing sales operations of H. S. Crocker Co., San Francisco. He will direct the sales activities formerly handled by Ed LeVesconte, vice president and general manager. Mr. LeVesconte will devote more time to the development of the

company's product diversification program.

Frank V. Liotta has been named director of Thomas D'Addario Studios, industrial designers, New York. The late head of the firm,



F. V. Liotta

Thomas D'Addario, Sr., was a five-time top award winner in national packaging competitions. Leading brands which he serviced included: Hoffman Beverage Co.; Myer 1890 Dated Beverages, Inc.; The R. T. French Co.; Gotham Ho-

riery Co., Inc.; and U. S. Plywood Corp.

The Poly-Seal Corp., New York, has appointed the Latchford-Marble Package & Supply Co. and Latchford-Marble Container & Supply Co. as exclusive distributors in California and Arizona.

Einson-Freeman Co., Inc., Long Island City, N. Y., won 16 awards in the recent fifth annual competition of the Lithographers National Assn.

Plax Corp., West Hartford, Conn., has moved its New York office to 500 Fifth Ave., New York 36, and its Chicago office to 1607 Howard St., Chicago 26.

The Evert Container Corp., Milwaukee, Wis., has begun production at its new 100,000 sq. ft. corrugated paper box plant. Charles W. Evert, president of



profiting from its
50 years' experience

CAN PUT MORE PROFIT IN
YOUR PACKAGE!

YOU'LL SELL MORE at the retail level because ABP quality showmanship stimulates impulse buying, encourages repeat sales of thousands of different products—powdered, granular and solid. Customers like ABP Bags' eye-catching designs and bright, fresh colors; their bold, easy-to-read type; their razor-sharp art and photographic reproduction. AMERICAN BAGS stand out, even in crowded supermarkets!



YOU'LL SAVE MORE at the packing and distribution levels because Kard-O-Pak and other famous ABP Bags cost less, and are often more durable, than the rigid and semi-rigid containers they replace! Their stand-up design and easy sealing are ideal for high-speed automatic packaging. ABP Bags are lighter, too; they cut shipping costs and handle more easily. And they protect your product from dirt, moisture, air and foreign matter.



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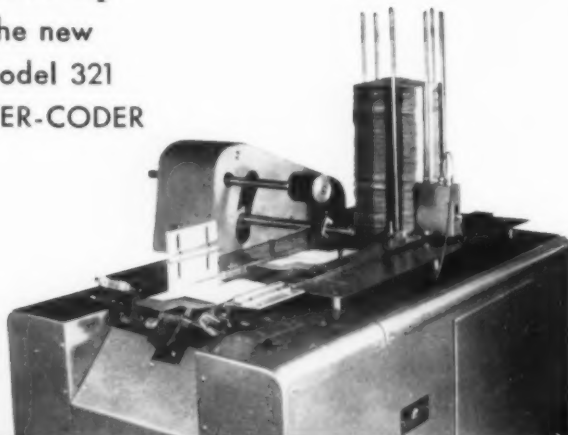
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with the new
**Bivans Model 321
PRINTER-CODER**

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Installed on
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MYLAR LAMINATIONS

- Cotton Fabrics
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- and other materials

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LAMINATED & COATED PAPER CO.
A DIVISION OF MELROSE PACKAGING

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Plants and people

the new firm, was formerly with the Downing Box Co. and is a former president of the Fiber Box Assn. Mrs. Evers is vice president of the new company, with Robert A. Dreyer treasurer and plant manager and Mrs. Dreyer secretary.

Dr. Harold M. Sonnichsen has been named a vice president of Permaceel Tape Corp., New Brunswick, N. J.

Fibreboard Products, Inc., San Francisco, has appointed B. L. Renderer to the newly created position of manager, packaging sales department. F. A. Ruether has been promoted to manager, distributor's sales department. R. J. Contel has been appointed to the newly created position of department manager of frozen-food packaging. W. E. Berg succeeds Mr. Contel as Eastern sales representative.

Frederick Remington has been re-elected president of Peerless Tube Co., Bloomfield, N. J., a position he has held for the past 25 years.



Mortimer J. Williams has been appointed products development manager for the boxboard division of Robert Gair Co., Inc., New York. Joseph L. Sterett has been made sales promotion representative for the shipping container division, with headquarters in New York.

Gair has opened a new folding carton sales office at 6107 Troost Ave., Kansas City, Mo., under James Howry.

Stockholders have approved agreements for Gair's acquisition of the Southern Advance Bag & Paper Co., Inc., and the Great Southern Box Co., Inc.

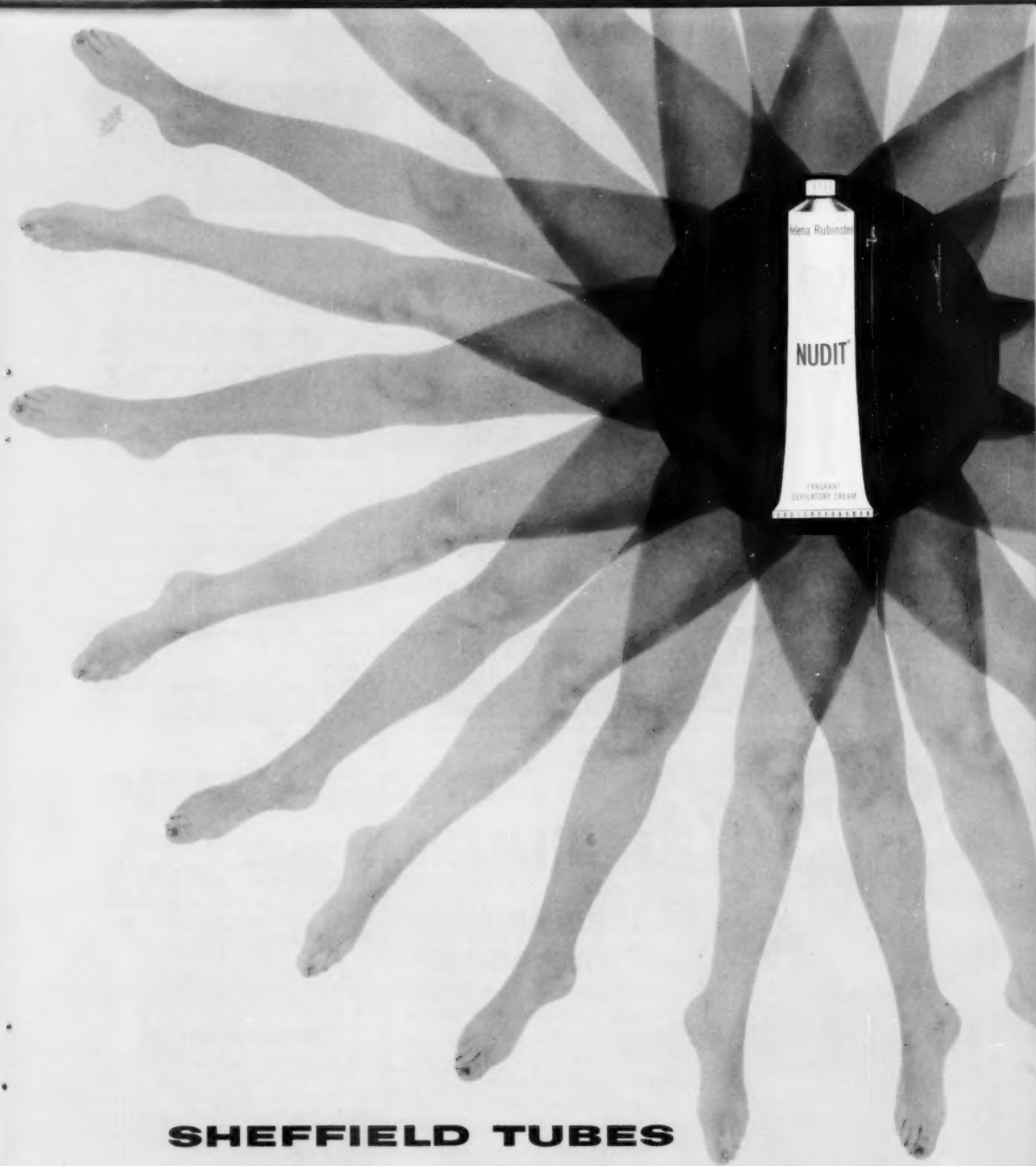
Harry Kanatzar, Jr., has been made sales representative at the Denver office of Fulton Bag & Cotton Mills, Atlanta, Ga.

Paisley Products, Inc., Div. Morningstar, Nicol, Inc., New York, has purchased the inventory of the Scriptex Adhesive Products Co., Philadelphia, and has transferred manufacturing operations to New York.

Gaylord Container Corp., St. Louis, Mo., has appointed William M. Burr sales manager for the Northwestern Div.

Stanley M. Johns has joined John B. Kohler, paper consultant of Crystal Lake, Ill., as chief of special project designs.

Formation of Samuel Fogel & Associates, 2310 Holt Ave., Montreal, Quebec, has been announced. The firm is Canada's



SHEFFIELD TUBES

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who has simplified the leg care of lovely women everywhere with her sensational, new cream depilatory...Nudit. Of course she put her revolutionary

depilatory in the most modern containers available...Sheffield Tubes. Here's a

fragrant product that gives skin a satin finish, packaged in collapsible tubes that are indispensable at home or for travel. Your product will go farther

with more people in Sheffield Process collapsible tubes, perfectly engineered for convenience, perfectly designed to attract attention.

Something Really **NEW** in a Paper Bag Closing Machine

DOUBLE FOLDS
and GLUES

OR

DOUBLE FOLDS
and
HEAT SEALS

OR

DOUBLE FOLDS,
HEAT SEALS
and GLUES

FRY CONTINUOUS-MOTION Bag Closing Machine (MODEL GS 54)



Makes strong, sift-proof closures.
Other models available. Send for descriptive literature.

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TUBULAR PAPER PACKAGING

Need a package that's rugged...or attractive...or both? Money no object or if you must count pennies — NIEMAND BROS. TUBULAR PAPER PACKAGING can do the job better! Available plain or printed — with decorative papers and with paper, metal or plastic closures.

Illustrated literature showing many interesting tubular package applications, available on request.

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"Packaging Engineer"
will be glad to consult
with you on your
Package problem.



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Plants and people

first packaging and display consultant organization. **Samuel S. Fogel**, former vice president of American Paper Box Co., Montreal, is in charge of the new firm.

The Mechanical Div. of **Doughboy Industries, Inc.**, New Richmond, Wis., has appointed the **ABC Packaging Co.**, Liverpool, England, and the **Overseas Trading Corp.**, Alexandria, Egypt, as agents to handle the Doughboy line.

Arnold Ginsberg has been elected vice president and a director of **National Container Corp.**, New York.

A four-day celebration has been held by National Container at its new \$25,000,000 mill at Clyattville, Ga.

Phillip H. Dewey has been appointed to the newly created position of administrative assistant at the central research laboratories of **Interchemical Corp.**, New York.

Koppers Co., Inc., Pittsburgh, Pa., has agreed to purchase all of the capital stock of **American Aniline Products, Inc.**, Lock Haven, Pa.

Insular Chemical Corp., Hicksville, Long Island, N. Y., will construct a plant for the production of polyvinyl chloride.

The merger of **Art Roll Leaf Stamping Co.** and **Art Marking Specialties, Inc.**, has been announced. The companies will operate under the name of **Art Decorating Co.** at 4201 Hudson Blvd., North Bergen, N. J.

Aluminum Co. of America, Pittsburgh, Pa., has installed new 72-in., four-high foil mills at its Alcoa, Tenn., plant.

Carl E. Schaeffer, general sales manager of **Stokes & Smith Co.**, Philadelphia, and former president of the company before it was purchased by the **Food Machinery & Chemical Corp.**, died May 4 at his home in Philadelphia. He had been in failing health for some time. Mr. Schaeffer had been with Stokes & Smith for 50 years and was widely known throughout the packaging field, having been active, from their inception, in the Packaging Division of the American Management Assn., Packaging Institute and Packaging Machinery Mfrs. Institute.



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Schaeffer

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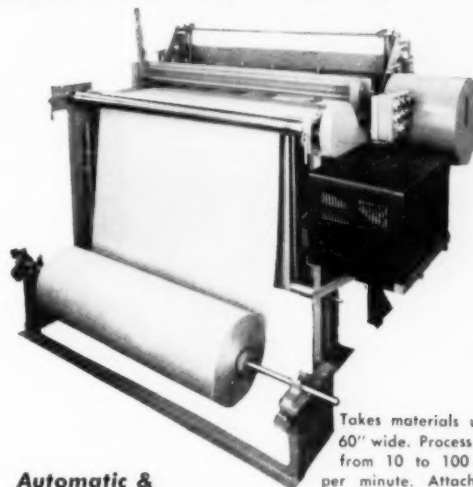
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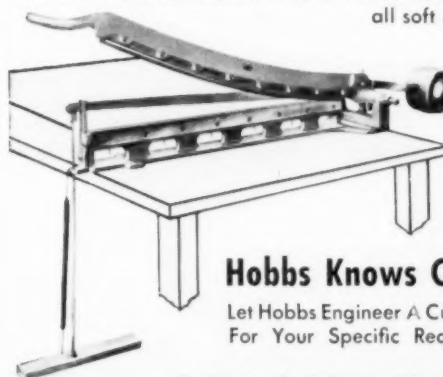
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For your information

The Glassine & Greaseproof Mfrs. Assn. has appointed **Robert D. Handley** as



R. D. Handley
director of publicity. Mr. Handley, long connected with the packaging field, will direct the association's new publicity program, aimed at keeping the trade informed of new developments and applications of glassine and greaseproof papers. Mr. Handley will headquarter at the GGMA office at 527 Lexington Ave., New York.

Bakelite Co., Div. of Union Carbide & Carbon Corp., New York, has established a modern laboratory completely staffed and equipped for scientific investigation of plastics packaging problems exclusively. Scientists, engineers and technicians at Bakelite's Bound Brook, N. J., plant will have available the most modern types of packaging equipment and will concentrate on practical packaging problems involving the use of Krene and Bakelite plastics and resins. The staff is divided into five teams to cover horticultural and food technology, mechanical packaging operations, printing on plastics, properties of films and packages, and consumer packaging. Research grants to colleges and other laboratories to study a particular phase of packaging are being employed to extend the scope of these activities.

The recent annual board meeting of the **Society of Industrial Packaging & Materials Handling Engineers** in Chicago was attended by the largest number of officers and directors ever to attend such a meeting. A 15% membership gain and the addition of three new SIPMHE chapters during the past year were reported. Two new national directors were named: **J. G. Green** of Hooper-Green Co. and **F. H. Wiley** of International Harvester.

Sale of exhibit space for the **1955 Industrial Packaging & Materials Handling Show**, to be held Sept. 20-22 in New York, is reported already to have exceeded the entire area used in last year's show.

The national officers and directors of the Society of Industrial Packaging & Materials Handling Engineers have authorized **Earl B. Candell**, SIPMHE president, to name a committee to meet officially with a similarly designated group representing the **American Material Handling Society** with a view to studying the possible merger of the two organizations.

The Golden Anniversary Convention of the **Lithographers National Assn.** will be held June 20-22 at the Lake Placid Club,

Lake Placid, N. Y. A special feature of the convention will be the showing of the 267 winning pieces in the recent 5th Annual Lithographic Awards Competition.

The **National Assn. for the Specialty Foods Trade** will hold its first annual **Fancy Food & Confection Show** at the Hotel Sheraton-Astor in New York, Aug. 28-30. The exhibit will include extensive displays of new and novel fancy foods and confections, along with a variety of basic products. The show is under the direction of the **Charles Snitow Organization**, 331 Madison Ave., New York.

Dr. A. H. Nadelman, head of the paper technology department at **Western Michigan College**, has announced the names of 19 persons admitted to a special three-week summer course on "Principles and Practice of Coated Paper Manufacturer": **R. M. Thibadeau**, of Burgess Pigment Co.; **Robert May** of Beveridge Paper Co.; **J. E. Boyle**, **J. Bauer** and **Norman Nuttall** of the Hubinger Co.; **V. W. Westdale** of Burroughs Corp.; **Christian F. Coertse** of St. Regis Paper Co.; **Anthony Powloski** of Kalamazoo Paper Co.; **Paul Waber** of Mac Sim Bar Paper Co.; **Gerald Hale** of Minerals & Chemicals Corp.; **George Booth** of Dilts Machine Works; **William Schoenberg** of Lord & Schoenberg Co.; **Logan W. Mather** of Gardner Board & Carton Co.; **William E. Wiliver, Jr.**, of New York & Pennsylvania Co.; **Henry Smaine** of P. H. Glatfelter Co.; **Hubert D. Foster** of Champion Paper & Fibre Co.; **A. P. Yundt** of Camp Mfg. Co.; **James L. Baker** of Albemarle Paper Mfg. Co.; and **S. C. Slifkin** of Products Research & Development Co.

Kenneth B. Ehlers has been elected secretary of the **American Management Assn.** **Charles M. Skade**, formerly of S. H. Kress & Co., succeeds Mr. Ehlers as controller.

Those attending the **Production Engineering Show** and the **Machine Tool Show**, to be held in Chicago Sept. 6-16, will encounter a novel way of overcoming traffic problems. A scheduled helicopter passenger service will be operated between the Navy Pier, where the Production Engineering Show will be held, and the International Amphitheatre, scene of the Machine Tool Show. Advance Registration cards for both shows are available from **Clapp & Poliak, Inc.**, 341 Madison Ave., New York 17.

The **Package Designers Council's 1955 Fellowship in Package Design** was won by **Richard Alexander Rogers**, a Univer-

sity of Illinois senior. The announcement was made by **Frank Gianninoto**, PDC president, at a recent meeting of the Council in Chicago. Fellowship funds are made available to PDC by **Irwin D. Wolf** of Kaufmann Dept. Stores in Pittsburgh and **Saul Poliak** of Clapp & Poliak, Inc., directors of the annual Packaging Show.

A 41-page booklet, "**The Defense Manual System in Our American Industry**," is now available from the Superintendent of Documents, Government Printing Office, Washington, D.C., and from Dept. of Commerce Field Offices at 25 cents per copy. The manual is a handy reference to the general rules applicable to defense-contract operations.

Packagers will be interested in a U. S. Dept. of Commerce report on the shelf life of 80 liquids and solids in blown polyethylene bottles. The report is based on a 19-month study conducted by **Plax Corp.** for **Wright Air Development Center** and is designed as a guide for the packaging engineer. It shows the suitability of packaging the 80 tested materials in polyethylene bottles ranging in size from 32 oz. to 13 gal. Copies of this 127-page report, "**Investigation of the Shelf Life of Liquids in Polyethylene Bottles**," may be obtained from OTS, U. S. Dept. of Commerce, Washington 25, D. C., at \$3.25 per copy.

Publication of Bulletin #601, "A General Index of Publications Issued by the Lithographic Technical Foundation," makes available an index to all LTF publications still in print up to and including those published in 1954. Copies of the bulletin are available from the **Lithographic Technical Foundation**, 131 E. 39 St., New

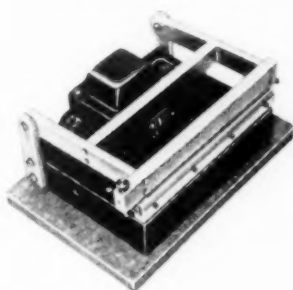
What's doing

- June 6-8—**American Pharmaceutical Mfrs. Assn.**, Greenbrier, White Sulphur Springs, W. Va.
- June 7-8—**Petroleum Packaging Committee of the Packaging Institute**, Hotel Broadview, Wichita, Kan.
- June 20-22—**Lithographers National Assn.**, 50th annual convention, Lake Placid Club, Lake Placid, N. Y.
- June 26-July 1—**American Society for Testing Materials**, 58th annual meeting, Chalfonte-Haddon Hall, Atlantic City, N. J.
- June 28-July 1—**American Drug Mfrs. Assn.**, Lake Placid Club, Lake Placid, N. Y.

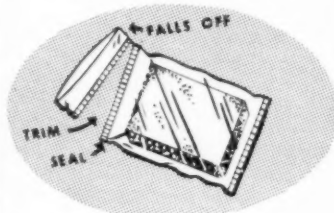
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Herbert Holbrook (left) of Standard Packaging Corp., a director of the Packaging Institute, with the assistance of the



Institute's Charles Feld, demonstrates one of the cow-bells attached to each Packaging Institute Report. The device was used at the recent Packaging Show and for the first time no reports were "lost."

The Packaging Institute announces the publication of the Third Edition of the Directory of Contract Packagers and Their Facilities, priced at \$5, which lists the equipment and facilities of some 163 contract-packaging plants. Also, the Recommended Standard Specifications for dimensions of steel drums and lug cover universal pails has been published as Report No. 2 of the PI Petroleum Committee and is available from the Institute, 342 Madison Ave., New York 17, at \$1 per copy.

A transcript of the proceedings of the Printing Processes Seminar at the Packaging Institute's 16th Annual Forum is now available as a separate document at \$2.25 per copy.

New officers of the Fibre Drum Mfrs. Assn. are Fred Mauer of Monmouth Container Corp., president; C. E. Eggers of Continental Can Co., vice president; R. F. Gumbert of Plyfiber Container Corp., secretary-treasurer. A special task committee has been appointed to revise specifications, bringing them up to date. Next meeting of the association will be held at the Edgewater Hotel, Madison, Wis., Oct. 20-22.

Packaging as a vital element of sales appeal is discussed extensively by Henry Dreyfuss, industrial designer, in his new book "Designing for People," being published by Simon & Schuster, New York.

The Waxed Paper Merchandising Council, Inc., 38 S. Dearborn St., Chicago 3, has issued a complete kit containing radio,

The Principle of the BROKEN RECORD

by Sidney Hollaender

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windows of retailers handling your products, your labels are constantly selling your name. And, you know how many times name selling is synonymous with product selling.

But, labels must be more than simple name plates which merely identify you as the sender of a package or the bottler of dill pickles or the producer of chemicals. Labels must blend in with the spirit, the fragrance, the color, the function of your product. . . . Just as the world of packaging involves expert design and layout and product engineering, these same elements are equally important in the production of effective labels.

Because Ever Ready means label leadership—60,000 orders of all shapes and sizes a year, and 15,000,000 labels a day—I know I don't have to dwell on our ability to build into your labels the important sales appealing aspects of your product. We've been doing it since 1914.

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TV, newspaper, outdoor, transit and store display suggestions to aid the baking industry in increasing sales of white bread wrapped in waxed paper.

A comprehensive treatise on rubber rolls published by **Rodney Hunt Machine Co.** is entitled "Rubber Rolls." Copies of this 60-page, illustrated handbook are available free to roll users, and at \$2 per copy to others, from the Rodney Hunt Machine Co., Orange, Mass.

National Adhesives, Div. of National Starch Products, Inc., has published a revised edition of its booklet, "How to Handle Adhesives for Transparent Films." Free copies are available from the company's executive office at 270 Madison Ave., New York.

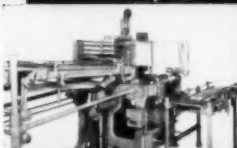
Reynolds Metals Co. has issued a new booklet entitled "Welcome to Listerhill" which describes Reynolds' first aluminum production plant, named for Alabama's Senator Lister Hill. This 24-page, illustrated booklet is available from Reynolds Metals Co., 2500 S. Third St., Louisville 1, Ky.

The **Dow Chemical Co.**'s catalog of plastic containers, which was released at the recent Packaging Show, is now available on request to the company's Plastic Merchandising Section, Midland, Mich. The catalog describes and illustrates a selection of some 200 different Styron containers available for packaging.

An interesting display of nearly three centuries of work in the field of graphic arts, "The Evolution of Graphic Arts," organized by **Marathon Corp.**, Menasha, Wis., was exhibited recently at Lawrence College, Appleton, Wis. Marathon developed the exhibition in cooperation with **J. S. Mertle**, a Marathon consultant on graphic arts. It contains selected pieces from Mr. Mertle's library, which is considered to be one of the largest private collections on photomechanical and graphic arts.

Fulton Bag & Cotton Mills has prepared a colorful cartoon poster, designed for use on bulletin boards and other appropriate plant areas, illustrating proper and improper methods of bag handling. The idea for the poster originated with a booklet "Safe Storage Tips for Multiwall Paper Bags," published by the company last year. Copies of the poster are available from the General Sales Office, Fulton Bag & Cotton Mills, P. O. Box 198, New Orleans 3, La.

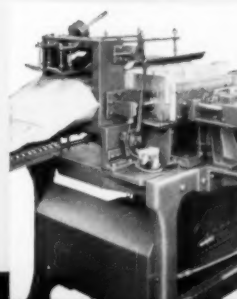
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U. S. patents digest

This digest includes each month the more important patents of interest to those who are concerned with packaging materials. Copies of patents are available from the U. S. Patent Office, Washington, at 25 cents each in currency, money order or certified check; postage stamps not accepted. Edited by H. A. Levey

Carton-Collapsing Machine, F. C. Gross and W. Luczek (to Package Machinery Co., East Longmeadow, Mass.). U.S. 2,704,966, Mar. 29. A machine for collapsing celled cartons of the type having side walls connected at their ends by end walls and intermediate their ends by transverse partition members, end walls being connected by a longitudinal partition member making a slotted engagement with the transverse partition members, a bottom panel hinged to side walls and foldable outwardly substantially about its longitudinal center, said machine comprising means to advance a succession of cartons, means to transfer the leading carton transversely to a first position to be advanced therefrom to a second position by the transfer of a second carton to first position, a pair of plungers respectively reciprocable into and from adjacent cells of carton at said first position in opposed relations on opposite sides of partition between said cells.

Bottle-Cap Structure, W. E. Glensky (to The West Co., Inc., Phoenixville, Pa.). U.S. 2,705,085, March 29. A cap structure for a bottle in which substantial internal pressures are likely to be created, comprising a circular resilient closure member adapted to engage top of bottle, a thin metallic reinforcing member overlying said closure member and having a circular body portion of substantially smaller area than said closure member, a plurality of spaced, outwardly projecting portions extending substantially to the periphery of closure member.

Bag-Closing Method and Closure-Dispensing Mechanism, F. G. Paxton and A. D. Paxton (to Paxton Machines, Inc., Riverside, Calif.). U.S. 2,705,100, March 29. In a mechanism for dispensing closures constructed to provide a body of flexible sheet material having an opening therethrough and a slot extending from the opening to an edge of the closure to define laterally flexible arms at opposite sides of the slot and opening, which comprises: a guide element having a guideway terminating at one end, rests spaced laterally from each other on which side portions of closure are supported while central portion of closure is left unsupported to render arms of closure free for flexing laterally outward from each other between rests by pressure of a contracted bag mouth against edge of body at said slot thereof, to widen the slot sufficiently for passage of contracted bag mouth into said opening of body.

Closure-Applying Apparatus, A. C. Everett (to Pneumatic Scale Corp., Quincy, Mass.). U.S. 2,705,101, March 29. Closure-applying mechanism for applying closures to containers, comprising a chuck having an annular resilient rubber-like gripping element confined therein against radially outward expansion, means mounting said chuck for rotation substantially about the axis of said annular element, said element being arranged to receive an axially positioned closure therein.

Container, J. W. Carlile (to Continental Can Co., Inc., New York, N.Y.). U.S. 2,705,103, March 29. A container comprising a tube of relatively thin flexible sheet material, said tube having an open end and being of approximately rectangular cross section when expanded, said tube having two opposed sides interfolded and the other two flat sides close together when collapsed, said tube having portions of walls at each unfolded side adhered to each other over an area of relatively small extent with adhered wall portions permanently defining a portion of center fold line of infolded sides and with inner extremities of said adhered areas extending inwardly of said open end to adjacent a transverse plane coinciding with the filling level when container is filled with a pre-determined quantity of merchandise.

Wrappers, C. W. Vogt, Norwalk, Conn. U.S. 2,705,104, March 29. As an article of manufacture, a plurality of wrappers, re-activable adhesive areas on said wrapper detachably to connect said wrappers together in series to facilitate feeding thereof to a station to receive material to be packaged and to seal said wrappers after they have been detached, each of said wrappers having a transverse box pleat adapted to be opened up to form a channel parallel to connecting means.

Heat-Sealing Apparatus for Thermoplastic Sheet Materials, V. H. Hasselquist (to The B. F. Goodrich Co., New York, N.Y.). U.S. 2,705,523, April 5. Apparatus for heat bonding multiple members of thermoplastic material comprising a chamber adapted to receive and continuously support said material along the inner surface of one continuous wall thereof, means for pressurizing said chamber to press said material against inner surface of continuous wall, heating means adjacent inner surface of said continuous wall for fusing pre-selected portions of material while under pressure on surface in said chamber.

Package for Capped Articles, W. A. Ringler (to The Gardner Board & Carton Co., Middletown, Ohio). U.S. 2,705,556, April 5. In a package for an assembly of capped articles, a collapsible carrier structure formed from a paperboard blank cut, scored and adhesively joined to form a band portion defining side and end walls of carrier structure.

Closure Member, N. Zepelovitch (to Nahum A. Bernstein, New York, N. Y.). U.S. 2,705,573, April 5. A hermetically sealing closure member for conventional, smooth-internal-wall containers having a pre-determined internal neck diameter comprising an outwardly radially deformable resilient sealing element of substantially uniform thickness and of stiffly resilient construction adapted to be positioned within neck portion of container to be sealed and having at least one slit therein to permit ready deformation thereof, said sealing element having an annular outwardly flared upper portion sized to be supported upon mouth of container to be sealed.

Disappearing Spouts for Dispensing Cans, W. Mack (to the United States of America as represented by the Secretary of the Army). U.S. 2,705,581, April 5. In a disappearing spout for a dispensing container the combination with a container wall through which said spout slides to and from a dispensing position and a retracted position; of a tubular fitting in wall concentrically of said spout, said spout having an inner end mounting a second fitting, said second fitting telescoping within said first-named fitting in spaced relation thereto when said spout is in dispensing position.

Fully Automatic Can Packager, F. U. S. Gilbert and J. Harrison, Jr. (to Cleveland Cleaner & Paste Co., Cleveland, Ohio). U.S. 2,705,584, April 5. In a can-packing machine, a plurality of can delivery tracks terminating in parallel can-canting elements disposed to cans held thereon in a first direction so that lower rims are raised on the side thereof opposite to first direction to a level above the highpoints of said can-canting elements, carton transposing means to transpose cartons in first direction in rectilinear attitude with an open side forward along a path extending transversely across can-canting element of said can delivery tracks, cartons transposing means being positioned so that cartons transposed along path are brought in oversliding contact with can-canting elements.

Machine for Automatically Packaging Potato Chips, E. V. Wise, Sr. (to Wise Potato Chip Co., a corporation of Pennsylvania). U.S. 2,705,585, April 5. In a machine for packaging potato chips in bags, intermittently operative automatic weighing and dispensing mechanism at which bags held by an operator may be filled with weighed quantities of potato chips and performing weighing and dispensing operation alternately, a series of bag-shaking, bag-spreading and creasing, and bag spreading and sealing mechanisms.

Box-Wrapping Systems, L. H. Lange and W. E. Flack (to Stokes & Smith Co., Philadelphia, Pa.). U.S. 2,705,905, April 12. In a box machine having reciprocating form-block structure and reciprocating member for moving an assembly of box structure and partially applied sheet material into the path of the form-block structure, suction means for engaging the unset adhesively coated surface of the leading unapplied panel of sheet material for support thereof during said movement of the assembly by reciprocating member.

Inclined Wall Display Tray, J. R. Steel (to Container Corp. of

America, Chicago, Ill.). U.S. 2,705,589, April 5. In an inclined wall display tray, a bottom wall panel and side walls at opposite sides of bottom wall panel, respectively comprising upwardly converging inner and outer panels hingedly connected at their upper edges, inner panel being hingedly secured at its lower edge to bottom-wall panel, the latter having a lengthwise fold line between the lower edges of inner and outer side-wall panels providing a folding panel hinged at its inner edge to the remainder of bottom-wall panel and hinged at its outer edge to the lower edge of outer side-wall panel.

Bagging Method, W. L. Inglett (to Inglett & Corley, Inc., Augusta, Ga.). U.S. 2,705,607, April 5. A method of bagging bulk materials which comprises the steps of supplying a succession of measured quantities of material in the form of fast-moving slugs falling by gravity at substantially regularly spaced intervals from a generally vertical spout disposed above a horizontal supporting surface; in the interval between each two successive supplying operations, applying an open-mouth bag to the spout in position to receive the next slug of material falling therefrom.

Package Conveying and Orienting Apparatus, E. J. Capstack and R. E. Davis, (to Joseph E. Seagram & Sons, Inc., Shively, Ky.). U.S. 2,706,031, Apr. 12. In a conveying and orienting device for circular articles, means presenting a substantially plane surface to receive said articles, a friction member arranged along the path of movement adjacent said surface; an endless band located in spaced relation to friction member along said surface, said band-carrying projecting means adapted to contact an article on said surface to convey the article along said surface and press the article transversely against the friction surface to cause the article to rotate as it is conveyed.

Fruit Container, J. E. Murphy and M. Schnall (to See-Qua! Package Corp., New York, N.Y.). U.S. 2,706,038, Apr. 12. In a package for a longitudinal row of adjacent fruit units, a molded plastic container tray having a base and a wrapping therefor, said tray having at said base a combination supporting and backing member, member comprising a semi-rigid bar extending longitudinally and medially along said tray and having laterally projecting fruit-supporting portions along the longitudinal extent thereof to support all of the adjacent fruit within said longitudinal row at medial portion of the fruit.

Carton for Yarn Packages, G. F. Courson (to Industrial Rayon Corp., Cleveland, Ohio). U.S. 2,706,040, Apr. 12. In combination with packages of yarn on hollow conical cores in a carton for shipping and storing said packages in a plurality of separated layers, a multiwall cellulosic corrugated board partition fitting in the cross section of said carton between each of said layers, said partition having a plurality of perforations forming a juxtaposed pair of generally rectangular core-engaging flaps unsevered from said partition along their non-contiguous sides while being accurately perforated through at least a portion of said partition along said non-contiguous sides.

Closure Connection, S. Stone, Fitchburg, Mass. U.S. 2,706,065, Apr. 12. A closure connection for a container member having a cover member, said members both having smooth, uninterrupted exterior surfaces that are surfaces of revolution of a straight line, each member having a substantially circular rim, said connection comprising a circular continuous exterior rib on one member adjacent and parallel the rim thereof.

Display and Dispensing Carton, W. J. Wells (to F. N. Burt Co., Inc., Buffalo, N.Y.). U.S. 2,706,066, Apr. 12. A display and dispensing carton for the selective dispensing of items such as articles or packages from a plurality of supplies of such items segregated according to characteristics, said cartons comprising, in combination, an outer container having dispensing openings through which said articles may be removed through its front wall at vertically spaced points along the height.

Tablet Counter and Packager, H. R. Furno, Burbank, Calif. (49% to Richard Hudachek, Hollywood, Calif.). U.S. 2,706,072, Apr. 12. A tablet counter and packager comprising a container having three sides, transparent removable cover and a bottom, the bottom having a number of recesses therein corresponding to the desired count, a handle on the container, electrical vibrating means for the container in the handle thereof for distributing the tablets in the recesses and a rearwardly disposed spout for discharging counted articles.

Collapsible Cartons, K. T. Buttery (to Sutherland Paper Co., Kalamazoo, Mich.). U.S. 2,706,075, Apr. 12. A collapsible carton formed of an integral blank and comprising complementary bottom members, complementary end members hingedly

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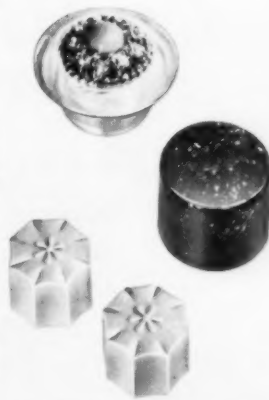
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connected to the ends of the bottom members, longitudinal
partition members hingedly connected to each other at their
upper edges and hingedly connected at their bottom edges to
the inner edges of the bottom members, partition members
being disposed in side-by-side relation and secured together
and being collapsible on one of the bottom members.

Bottle Cap, J. F. Tocco, Brooklyn, N.Y. U.S. 2,706,572, April
19. A crimped-type metal bottle cap having a relatively flat
circular top portion adapted to fit snugly over the open neck of
a bottle and downwardly depending flange portion consisting
of an upper portion forming a substantially vertical wall and
a flaring skirt portion extending substantially obliquely out-
wardly from the lower edge of upper portion, flange portion
being provided with a plurality of alternately spaced ridges
and depressions forming a resilient crimp adapted to be secured
over the lip of a bottle.

Closure Seals, R. W. Wolf (to Heintz Mfg. Co., Philadelphia,
Pa.). U.S. 2,706,577, April 19. A sealing arrangement for
circular closure comprising an integral peripheral flange on
closure, said flange having a first portion extending trans-
versely to the closure and a second portion extending parallel
to and toward the transverse axis of closure, flexible-closure
gasket means positioned partly between second flange portion
and the parallel peripheral portion of closure.

**Fully Partitioned Collapsible Carrier Which Is Rigid When
Erected**, W. A. Ringler (to Gardner Board & Carton Co., a
corporation of Ohio). U.S. 2,706,578, April 19. A collapsible
paperboard bottle carrier having in combination side walls and
end walls, and a bottom, said end walls and bottom being
collapsible on median lines of fold, partial longitudinal partition-
forming parts extending inwardly from the lines of fold of said
end walls and meeting centrally of carrier.

Carton, W. G. Sheard (to General Container Corp., Cleveland,
Ohio). U.S. 2,706,591, April 19. A container of keg-like load-
bearing strength, made of corrugated board or the like, compris-
ing three mutually supporting elements, each of said elements
having a square tubular body portion comprising four sides
folded along vertically extending score lines, each of said el-
ements having flaps extending from the sides of the body portion
thereof to close at least one end of elements, two of elements
comprising cap members in the form of open-ended boxes hav-
ing telescoping engagement with the third element.

Carton, M. Schaller (to Lorentzen Hardware Mfg. Corp., New
York, N.Y.). U.S. 2,706,592, April 19. An octagonal paper-
board carton for containing a cylindrical object, said carton
comprising two octagonal paperboard panels defining upper
and lower faces of the carton adapted to overlie the ends of the
object, said panels each having a marginal flap on each facet.

Shipping Cases for Rayon, W. F. Caraher (to E. I. du Pont de
Nemours & Co., Inc., Wilmington, Del.). U.S. 2,706,593, April
19. A large-sized paperboard shipping case for yarn packages
suitable for packing and unpacking at least six layers of yarn
cones readily by an operator in a crowded place, comprising
an outer lower portion of the case formed of a one-piece stan-
dard "half-slotted" carton of sufficient depth to accommodate
three layers of yarn cones and having two substantially identical
U-shaped liner members fitted snugly within carton with legs
of the U's in abutting relationship to line four carton sides.

Bottle Cases, R. M. Dunning (to Waldorf Paper Products Co.,
St. Paul, Minn.). U.S. 2,706,594, April 19. A container in-
cluding a bottom panel, side-wall panels connected thereto,
end-wall panels connected to side-wall panels and bottom panel,
a pair of cover panels connected to the upper edges of side
panels, and a flange on each cover panel extending down-
wardly at substantially right angles with respect thereto.

Locking Device for a Container, C. D. Fallert (to Gaylord Con-
tainer Corp., St. Louis, Mo.). U.S. 2,706,595, April 19. A
container comprising a rectangular body having upright side
walls and a rectangular-shaped cover member having a deform-
able depending rectangular-shaped marginal skirt overlapping
and snugly fitting upon the outer faces of upper portions of the
side walls of the body, body having two similar substantially rec-
tangular-shaped integral extension flaps foldably connected to
opposite upper edge portions of two opposing walls of the body,
said skirt engaging tabs in the horizontal opening therein and
thereby locking cover to body.

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EQUIPMENT • SUPPLIES • SERVICES

TAGS, LABELS, DISPLAYS. Catalog of company's line of labels, seals, tags and printed point-of-purchase display material. Also gives guide to preparation of copy for informative labeling program. The Reyburn Manufacturing Co. Inc. (F-551)

WEB PACKAGING MACHINE. Booklet describes machine which takes printed or unprinted web from roll, then forms, fills and seals the flexible package at speeds from 50 to 140 packages per minute. Stokes & Smith Co. (F-552)

PACKAGING SYSTEM. Illustrated booklet shows how metal edged boxes are formed and set up at user's plant. Describes advantages, applications. Gives specifications of two models of metal edge stayer. National Metal Edge Box Co. (F-553)

WRAPPING MACHINES. Literature gives detailed description and schematics of two models of a semi-automatic wrapping machine for single packages and for multiple-wrapping of cartons. Scandia Manufacturing Co. (F-554)

BAG MACHINES. Illustrated literature describes line of bag machines for the production of bags from polyethylene, polypropylene, cellophane and other heat-sealable film stock. Machines will make flat, gusseted single wall and duplex bags. Roto-Bag Machine Corp. (F-555)

CUSHIONING MATERIAL. Leaflet describes uses of "Hairflex" package padding material, made of curled animal hairs, bonded with latex rubber, vulcanized and cut into sheets. Curled Hair Department, Armour & Co. (F-556)

BOXBOARD PRINTING PRESS. Booklet outlines features, gives specification, and describes line of two, three and five-color, sheet-fed rotary letterpresses. All units will handle boxboard sheet sizes up to 48" x 71". C. B. Cottrell & Sons Co. (F-557)

PLASTIC BOTTLES. Literature describes and pictures line of flexible polyethylene bottles for wet or dry products that can be sprayed or sprinkled. Stock and custom molded models available. Shellmar-Betner Div., Continental Can Co. (F-558)

HEAT SEAL COATINGS AND ADHESIVES. Technical bulletin describes in detail with charts, tables and text a line of polyamide heat seal coatings and adhesives. Gives properties, suggested formulations, application data. Chemical Division, General Mills. (F-559)

BOTTLE LABELER. Data sheet presents description and specifications of "Prestomat" bottle labelers. Units feature in-line feeding. Speeds adjustable from 1250 to 3000 bottles per hour. Alfred Hofmann & Company. (F-560)

WEIGHING MACHINES. Folder contains descriptions and specifications of a line of semi-automatic weighing machines for packaging, batching, bagging, compounding, and feeding a wide variety of commodities. The Exact Weight Scale Company. (F-561)

BAG CLOSING MACHINES. Data sheet presents specifications and costs of two bag-closing machines for use with "Kwik-Lok" closures. Kwik Lok Company of America. (F-562)

CONVEYORS. Illustrated catalog gives full description, specifications, sizes, and prices for extensive line of gravity, power and gravity-power conveyors. Numerous accessories also described. Metzgar Conveyor Company. (F-563)

FILLER FOR VISCOUS OR SEMI-SOLID PRODUCTS. Illustrated catalog describes operational features and applications of company's line of rotary piston fillers, used in packaging viscous or semi-solid products. Profusely documented with engineering drawings, tables, and specifications. The Pfaudler Company. (F-564)

HOW TO PACK AND SHIP PLASTICS. Comprehensive manual gives detailed suggestions for proper packaging and shipping of plastic products. Container design and selection, stacking and loading for shipment, palletizing, classification rates and common carrier regulations are among subjects covered. Plastics Division, Monsanto Chemical Company. (F-565)

FLEXIBLE FOAM MATERIAL. Folder describes physical and chemical properties of foamed polyester cushioning material. Sample included. Hudson Foam Plastics Corp. (F-566)

HUMIDIFICATION MANUAL. Illustrated manual discusses effects of humidity control on paper conditioning, printing, paper cartons, paper bags and cellophane. Company's line of industrial humidifiers are described and shown, data given. Walton Laboratories, Inc. (F-567)

NEW LABELING MACHINE. Illustrated folder gives description and specifications of "Uni-Matic" automatic labeling machine for glue, thermoplastic or preglummed labeling on any size and shape container. MRM Company, Inc. (F-568)

MERCHANDISING WITH CORRUGATED BOXES. Twenty-eight page booklet presents points to consider in planning a merchandising package and illustrates ten merchandising jobs an attractive package can do. Hinde & Dauch Paper Co. (F-569)

SELF-CUSHIONING CONTAINERS. Sheet describes attractive custom molded foam-plastic containers for both consumer and industrial packaging of fragile or delicate products. Containers are available in any color, are said to have good re-use value. Ambassador Plastics & Manufacturing Corp. (F-570)

POLYETHYLENE BAG MACHINES. Folder gives brief description of unit with claimed production rate of 4500 average size bags per hour from plain or printed polyethylene tubing. Will make bags up to 14 inches in width, 27 inches in length. Hilker Products. (F-571)

PLASTIC CONTAINERS. Sheets describe company's facilities for producing plastic vials and cylindrical containers. Includes specifications of a line of stock threaded, shell and shoulder vials. Lerner Plastics, Inc. (F-572)

BAG SEALER. Illustrated leaflet gives specifications of compact band-type heat sealer for bags of various film materials. Unit has sealing speed of 315 inches per minute. Ralph Chaffee & Company. (F-573)

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EQUIPMENT • SUPPLIES • SERVICES

COLLAPSIBLE TUBES. 16-page catalog gives information on line of collapsible tubes, available in various metals and a range of necks and openings. Also gives capacity chart and formula for determining correct size of tube carton. Sun Tube Corporation. (F-574)

PACKAGING MACHINERY. Catalog describes company's extensive line of packaging machinery for dry materials: fillers, coupon inserters, auger packers, carton sealers, net weighers, conveyors, and elevators. Weigh Right Automatic Scale Company. (F-575)

LIQUID HANDLING EQUIPMENT. Catalog describes line of machines and accessories for liquid handling, including filters and filtering machines, mixers, hand cappers, bottle fillers, and pumps. Specifications included. Ertel Engineering Corporation. (F-576)

'TAKE-HOME' CARTON PACKAGING MACHINE. Folder describes and shows photos and floor plan for "Packomatic" take-home carton packaging line, consisting of carton-forming, filling and sealing unit, case loader and case gluer-sealer. J. L. Ferguson Company. (F-577)

TEAR-CORD FOR BAGS. Literature provides detailed description of Govatos "Zip-Corder" bag sealing machine. Feature of machine is insertion of a cord under heat-sealed flap, which is pulled to open bag. Boston Packaging Machinery Company, Inc. (F-578)

PACKAGING MACHINERY MAINTENANCE. Illustrated reprint from MODERN PACKAGING describes how "Teflon" coatings on rollers, sealers, hoppers and other working parts of packaging equip-

ment eliminate costly clean-up operations. General Plastics Corp. (F-579)

INK OFFSET AND STATIC PREVENTION. Illustrated leaflet describes and gives specifications of "Oxy-Dry" anti-offset powder sprayer, for all offset presses 17 x 22 and up. Unit also eliminates static electricity from sheets. Oxy-Dry Sprayer Corp. (F-580)

ADHESIVES MANUAL. Revised edition of booklet "How To Handle Adhesives for Transparent Films." Also included is a detailed chart of commonly used transparent films containing data on sources of supply, properties, gauges, characteristics. National Adhesives, Division of National Starch Products, Inc. (F-581)

BAG FILLING. Complete description and specifications of hand-fed filling machines for bagging textile products, produce, and other items. Designed for use with plastic, paper, or combination bags. Tele-Sonic Packaging Corporation. (F-582)

WEB OR SHEET PRINTER. Illustrated literature provides description, schematic and specifications of various models of "American Micro Printer." Small machine incorporates aniline press principles, prints on a wide variety of surfaces, can be integrated with many packaging or process machines. American Marking Corporation. (F-583)

AUTOMATIC UNIT PACKAGERS. Folder shows and describes a line of automatic equipment which will perform an entire cycle of packaging operations, including feeding, filling, forming, and heat-sealing packages. Wrap-Ade Machine Company, Inc. (F-584)

SHEAR CUT AND RAZOR BLADE SLITTER. Illustrated folder provides detailed description and specifications of shear cut, razor blade, and rotary burst type slitter for film, tape, foil, and paper. Prices for machine models and accessories are given. John Dusenberry Company, Inc. (F-585)

CASE SEALERS. Folder gives details of line of automatic and semi-automatic case sealers, with and without heater elements, and in models able to handle cases as large as 16"x18"x18". Specifications and floor plans included. A-B-C Packaging Machine Corp. (F-586)

IMITATION GOLD FOIL. Folder contains working samples and mentions applications for new, imitation gold foil, used in hot die stamping. Ralph W. Grauert, Inc. (F-587)

ADHESIVES. 22-page booklet gives detailed presentation of properties, compounding, handling, and uses of "Gelva" line of adhesives. Adhere to absorbent, non-absorbent surfaces. Heat sealing, pressure sensitive and wet bond types available. Shawinigan Products Corporation. (F-588)

PLASTIC CONTAINERS. Folder describes line of "Clearsite" plastic containers, available in a range of stock sizes, rigid or flexible, polystyrene or cellulose acetate. Detailed dimensions and descriptions are given. Celluplastic Corporation. (F-589)

INK AND COATING DRYERS. Booklet describes applications in printing and coating of line of dryers, fusers, and pre-heaters. Units for both moisture-set and heat-set inks, and for vinyl and resin coating are described. F. C. Dawson Engineering Co. (F-590)

CARTON SET-UP MACHINES. Illustrated leaflet describes and gives specifications for a line of automatic carton set-up machines, including a model with conveyor features. Specifications for carton closer with one-a-second capacity also given. E. L. Bivans, Inc. (F-591)

CLOSURES AND SEALING MACHINES. Catalog describes company's metal line of closures for bottles and jars. Closures include non-threaded and vacuum types. The sealing machines are designed to apply the company's line of caps. Anchor Hocking Glass Corp. (F-592)

MANUAL ABOUT HEAT SEAL PAPERS. Comprehensive manual gives detailed properties and specifications of company's line of heat seal papers. Discusses heat sealing equipment and printing, processing, storage and handling methods. Nashua Corporation. (F-593)

CORRUGATED BOX MACHINE. Bulletin describes box making machine designed especially for "Captive" plant operation and featuring production rate of 400 to 600 boxes per hour. Specifications, box size, ranges, some dimensions included. Colt's Manufacturing Co. (F-594)

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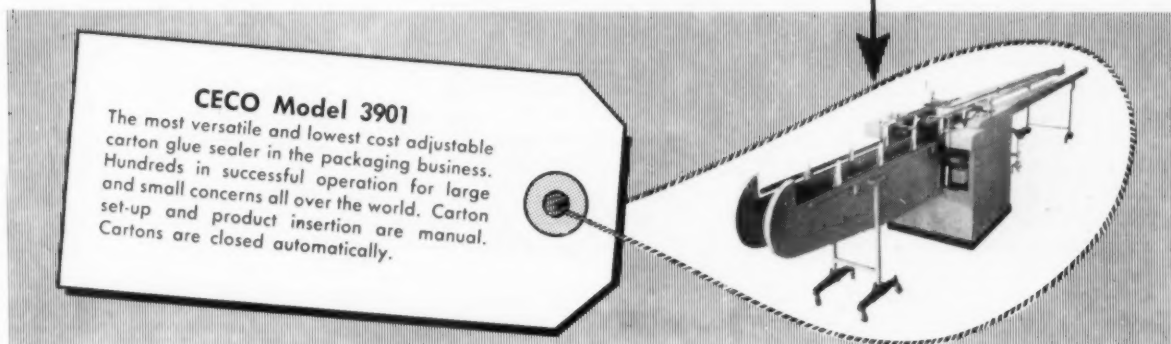
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All CECO Cartoners are adjustable quickly without special tools by unskilled help for a wide range of carton sizes. Economical for long or short runs. All models can glue-seal both ends, or seal one end and tuck the other, or tuck both ends. CECO Cartoners produce clean, square, stronger cartons at less cost and with less floor space. A CECO Cartoner generally pays back its low cost in less than a year. Let us prove it. Send for details.



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JUNE 1955

207

Plastic skin for replacement parts

(This article continued from page 101) on the feed cables two-up, while snorter parts may be placed four-up to utilize the full capacity of the machine. Optimum spacing for parts of some types is about 3 in. apart, which provides adequate coverage of plastic film, reduces the overspray and permits sufficient air circulation throughout the process.

As the moldings progress into the unit on the feed cables, they pass beneath the spray section, containing an automatic transverse travel unit which cuts on and off at a pre-determined, adjustable point. With this arrangement, the machine may be set to cover only that area over the cables which is required for the length of moldings being processed, eliminating excess overspray.

Actual application of the plastisol to the metal parts is accomplished by means of four adjustable spray heads which permit varying the angle and area of spray for adequate film coverage. With this arrangement, and since the parts are carried directly past the spray heads, odd shapes and curved moldings present no problem. In this installation, an air pressure of about 70 lbs. is used on the spray heads for atomization of the liquid plastic and 20 lbs. for the pump and fluid lines.

As pointed out earlier, one of the essential features of this installation is the fact that the vinyl plastisol material is 100% recoverable. The recovery section, located directly beneath the spray area, consists of a shallow

tank or series of trays which collect the overspray and the accumulated material which is removed from the cables by scrapers. Containing no solvent, the recovered material is pumped back into the supply drum for immediate re-use.

Although this section of the installation is hooded and vented in compliance with health and safety regulations, the vinyl plastisol material used has a very high flash point and is not considered dangerous or toxic.

The air-powered pump which feeds the coating material through the fluid lines is suspended from a balance in order to permit transfer from one drum to another in a matter of minutes. In the Buick installation, it was considered much more satisfactory to pump the plastic material directly from the drum, as received from the supplier, than to provide a built-in supply tank.

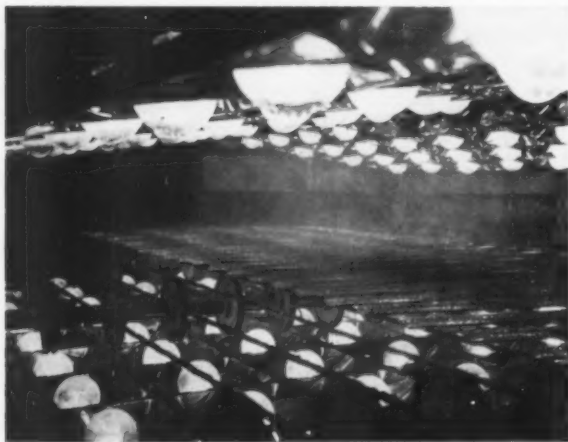
After being coated with vinyl plastisol by the spray heads, the moldings move out of the wet section of the installation and automatically transfer to dry cables. This change-over is made to prevent the overspray from being carried into the curing oven, which would fuse the accumulated material and obviate its recovery and re-use. It also makes it possible to recover, by means of scrapers, any overspray that might be carried on the cables. Transfer of the moldings from the wet to the dry set of cables is made without disturbing their position, since the pulleys or sheaves for

both the wet and dry sections are mounted on the same shaft. Individual spring tensioners keep each cable taut to provide smooth conveying and transfer of the parts.

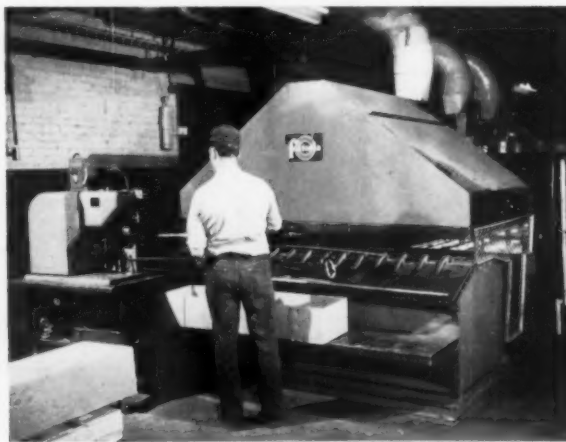
Next the sprayed parts enter the heat section or curing oven of the unit. Measuring approximately 12 ft. in length, the curing section is equipped with a battery of 196 infrared lamps of 375-watt capacity. Wired in banks and placed above and below the material for even heat distribution, the lamps provide an operating temperature of 325 deg. F. within the oven section. Dependent on the weight of the metal being processed and the speed of the conveyor, which can be varied as required, various sections of the lamps may be cut in or out if necessary. In normal operation, the parts to be protected move through the oven at about 4 ft. per min., producing a 3-min. curing cycle. A ventilator section at the end of the oven section removes the slight amount of smoke or fuming caused by the effect of the heat on the plasticizer and also helps to reduce the temperature of the parts before they reach the second operator.

Leaving the oven, the parts have fully cured coatings and are ready to handle. Here the other operator removes them from the unit, applies an identifying tape and packs them in master cartons. For the identification process, the parts are inserted into the throat of a machine which automatically applies a strip of ½-in.-

CURING OF COATINGS is accomplished in infra-red oven at about 325 deg. F. as parts move through at 4 ft. per minute. Speed and heat concentration are adjustable.



AT END OF LINE, coated parts are removed and inserted in machine which automatically applies strip of identifying printed tape having heat-activated adhesive backing.



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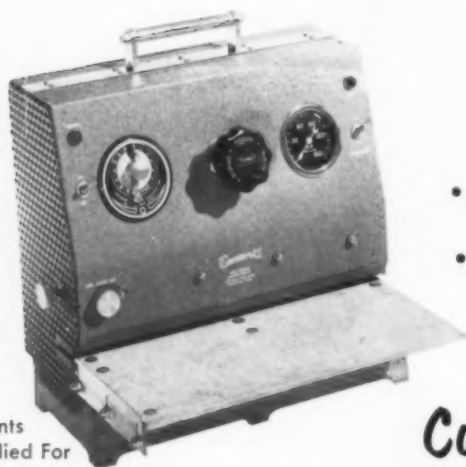
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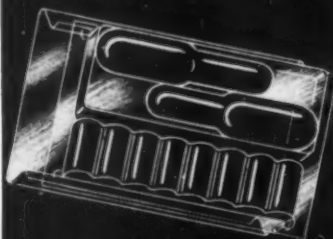
A striking, self-selling package was achieved by David Traum Co., Inc. with this clear plastic slide cover box, custom-designed by PLASTIC ARTISANS, INC.

The contoured box presents Traum's Tailor Tacker and Pattern Perforator plus eight chalk refills in eye-catching, three-dimensional detail. Each of the items is held separately in its own form-fitting pocket, protected against handling or intra-package contact.

Detached from the card, the slide cover box becomes a reusable case—adding extra sales value. (For products requiring less luxurious packaging, a product-contoured box tray, without cover, can be stapled or sealed directly to the card, forming a DOMEPAK.)

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PA-105

wide paper tape backed with a heat-activated adhesive. At the present time, Buick prints these tapes in its own printing department. At a later date, it is planned to add a printing unit to the machine which applies the tape.

Utilizing the new plastic coating process, Buick is now able to process from 1,000 to 1,500 moldings per hour, using two operators, as compared to the previous rate of 40 pieces per hour per man. The vinyl plastisol material used in this operation costs approximately 47 cents per lb., giving a cost of \$0.0259 per sq. ft. for a 10 mil protective film. Cost of the installation was approximately \$18,000.

In addition to the cost saving obtained through adoption of the new packaging method, Buick has also been able to effect considerable savings in storage space, since moldings protected in this manner are much less bulky than parts covered by paper sleeves and may be satisfactorily nested. Buick dealers are particularly pleased with the new packaging procedure, since they no longer have a problem of concealed damage and can readily identify and store parts.

CREDITS: Spraying equipment and oven installation by The De Vilbiss Co., 300 Philips Ave., Toledo 1, Ohio, and Fostoria Pressed Steel Corp., 1952 Bradner St., Fostoria, Ohio. Vinyl plastisol coating compound by Dennis Chemical Co., 2701 Papin St., St. Louis 3, Mo. "Packmaster" machine for applying identifying tape to parts, Packmasters, 1056 Home Ave., Akron 10, Ohio.

Polyethylene in barrier

(This article continued from page 165) critical items need to be stored outside temporarily because of lack of inside storage area, or because of transportation difficulties. Many critical items in the past have become literally sidetracked for long periods of time and have begun to show the ravages of weather because they were not properly packaged. The polyethylene barrier material appears to open the way to this and other wider uses in defense packaging.

References

1. Gelber, P. A., Flexible WVP Barriers, MODERN PACKAGING 27, No. 4, pp. 142-143, 203, 204 (Dec., 1953).
2. Gelber, P. A., and Bowen, Jr., J. H., Flexing-Test Device, MODERN PACKAGING 25, No. 5, pp. 125-128, 178, 179 (Jan., 1952).

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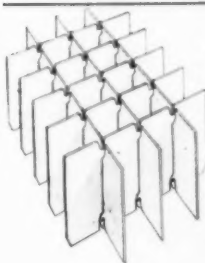
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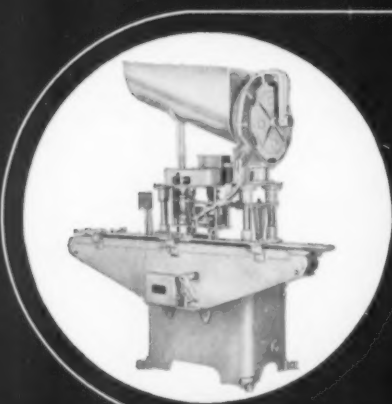
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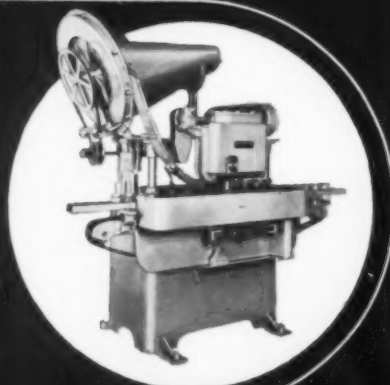
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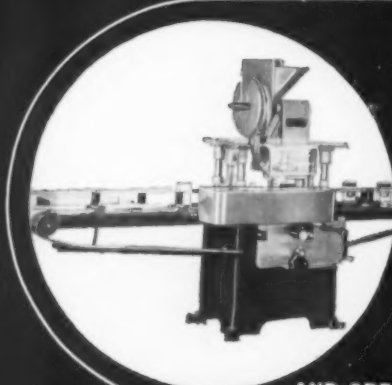
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NAPA forecast

Next quarter of 1955 will see the demand for containers of all types reach an all-time peak, according to the latest bulletin of the National Assn. of Purchasing Agents. The peak food-packing season, continued high levels of employment and retail business volume, increased capital investment and population, and continued growth of unit consumption are all listed as underlying reasons for this expected increase.

The NAPA says that container supplies will be adequate and that no raw-material shortages are indicated. Expanded, modernized and new plants will assure buyers of a ready supply of all types of packaging, with continuing keen competition preventing any advancing price trend.

However, packaging buyers are reported to have increased their container inventories in the past quarter, chiefly to build up adequate supplies against the possibility of tighter credit, labor strife or transportation delays. But any shortages are expected to be only local and of short duration.

Capsule predictions for the quarter for types of containers are:

Glass containers: sharp increase in demand; no major price change.

Paper containers: ample supplies; increasing demand; price increases unlikely.

Wood containers: demand strong; prices up slightly.

Plastics: increased demand; prices trending downward because of keen competition.

Metal containers: aerosol prices up slightly, increases possible for other products, especially closures; demand for cans up.

Textile bags: market quiet, demand slightly lower.

Paper veneers

(This article continued from page 162)
able for dimensional changes, which was not true of Materials C or D.

In an atmosphere of 80 deg. F. and 97% r.h., Materials A, C and D were virtually unaffected for 60 days. The plywood and Material B, however, delaminated badly at the glue line during this exposure.

Conclusions and recommendations

The paper-overlaid veneer boxes investigated in this study were found to perform approximately as well as

MODERN PACKAGING

boxes constructed with 3/20-in. container-grade plywood. This indicates that any of these paper and veneer combinations were suitable alternates for 3/20-in. container-grade plywood (Groups I or II) in panel boxes similar in design to those used in this study. The results of the revolving-drum tests on these fully cleated-panel boxes show that, on the average, the plywood control boxes gave lower performance than any paper-overlaid veneer boxes. The results of the corner-compression tests on the boxes show that the plywood boxes sustained maximum compression loads only slightly higher than most paper-overlaid veneer boxes. The paper-overlaid veneer boxes showing the lowest average performance withstood compressive loads equalling 80% of the average loads sustained by the plywood boxes.

The results of the tests of the various panel materials show that, except for a few instances involving the thinnest materials, the paper-overlaid veneers excelled 3/20-in. plywood in impact puncture resistance, stiffness, nailhead pull-through resistance and lateral nail resistance. Furthermore, the majority of the paper-overlaid veneers had more uniform stiffness across and with the grain of the core than did the plywood. In several instances these materials exceeded the performance of 3/16-in. plywood in these tests. Since the paper overlays were more homogeneous than the veneer cores, higher ratios of paper to wood thickness contributed to uniform and oftentimes better performance than thicker materials having lower paper-to-wood ratios. This was especially noticeable during the impact puncture-resistance test.

It is believed that the measurement of certain important strength and mechanical properties of panel materials, such as paper-overlaid veneers, would be a satisfactory criterion for determining their suitability for use as panels in fully cleated-panel boxes.

Those properties which are thought to be of more importance are stiffness and impact puncture resistance. If adverse storage or shipping conditions for panel boxes prevail, then properties such as those dealing with strength of joint fastenings and water and fungus resistance deserve due consideration.

Correlation between the composite stiffness of a paper-overlaid veneer

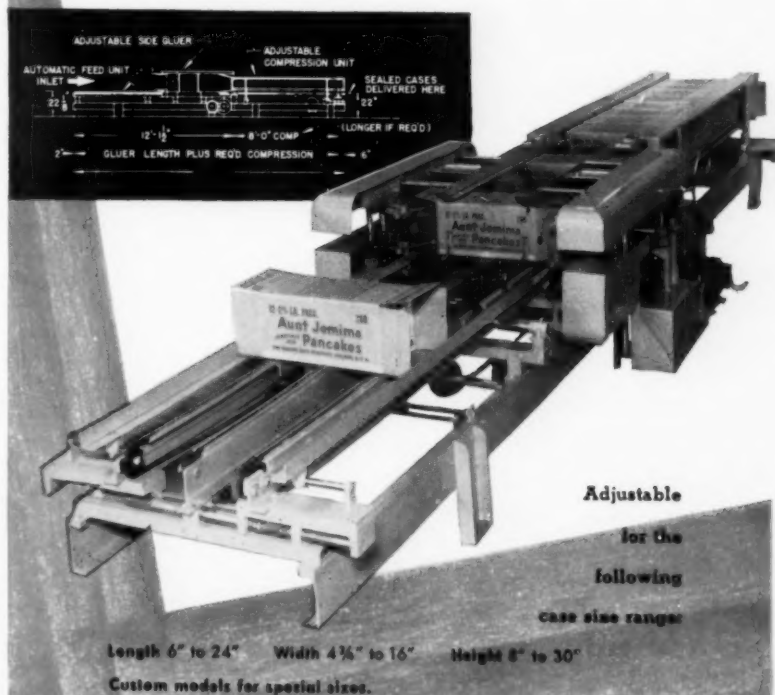
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CASE OPENING, LOADING AND SEALING WITH

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Pictured below is the automatic side case gluer and compression sealer. It receives filled cases from automatic loader—case flat, resting on broad panel. Automatically tucks inner flaps, applies adhesive to inner surface of outer flaps, folds flaps into position and discharges case into side belt compression sealer.

Gluer, 12"–1½" overall compression. Built to your speed requirement.



Adjustable
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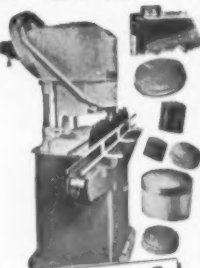
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material and the average number of falls sustained in the revolving drum of boxes made from these materials is indicated, but is not perfect. Accordingly, several of the paper and veneer combinations tested in this study should be a suitable alternate for plywood thicker than 3/20 in. in cleated-panel boxes.

Test data of additional containers would be of material aid in better establishing the relationship between stiffness of the panels and rough handling of boxes.

Industrial family

(This article continued from page 136)
convenient adjustability of the carton-sealing machine, which is capable of operating as fast as 90 packages per minute.

The machine adjustments for different carton sizes are made in a matter of a couple of minutes without removal or replacement of parts. A single crank on the right side of the unit opens and closes the entire machine for depth adjustment simultaneously. Two speed handles are used to adjust for different container heights.

The wing-nut attachment of the plows and folders facilitates rapid interchange of parts in the occasional instances when these components must be removed and replaced to accommodate various different container sizes.

In the Airtex installation, packaging-line operators receive finished parts in wheeled containers which carry them directly from the production line.

Speed of operation of the carton-closing and sealing unit is such that packages may be fed simultaneously from both sides of the intake conveyor without taxing or even approaching the capacity of the packaging equipment.

CREDITS: Design program by William Frankel Associates, 21 E. Superior St., Chicago. Packaging consultants, W. Scott Hassler Associates, 2601 Peterson Ave., Chicago. Ceco Model A-3901 automatic carton sealer by Container Equipment Corp., 78-88 Locust Ave., Bloomfield, N. J. Folding cartons by Acme Paper Box Co., 5920 S. State St., Chicago; Carton Craftsmen, Inc., 813 N. Franklin St., Chicago, and Acme Folding Box Co., 200 Lynch St., St. Louis 18. Corrugated boxes by Wabash Fibre Box Co., Terre Haute, Ind.

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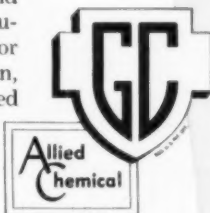
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General Chemical's Technical Service Department can help you get started in aerosol packaging, or give the technical assistance needed in developing new types of pressure-packed products. It is completely equipped with experimental aerosol filling and testing apparatus; has accumulated data on formulation compatibility, vapor pressures, densities, for a wide range of products, etc. For full information, write the nearest General Chemical office listed below.



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genetron 12: Dichlorodifluoromethane; the first widely used aerosol propellent, is ideally suited for formulations requiring high vapor pressure, low boiling point, such as insecticides, paints and lacquers.

genetron 11: Trichloromonofluoromethane; finds its greatest use in combination with GENETRON 12 in a majority of low pressure formulations, such as hair lacquers, air refreshers, Christmas snow, space and residual insecticides.

genetron 320: Dichlorotetrafluoroethane; used in combination with GENETRON 12 in shave lathers and other foam products; makes possible a whole new range of drug and cosmetic aerosol products.

genetron 101: Monochlorodifluoroethane; has high vapor volume and odor stability characteristics that particularly suit it for use in the perfume industry—less propellent goes a longer way.

genetron 226: Trichlorotrifluoroethane; is for use principally as a blend with other GENETRONS in specialized formulations (powders, certain foam products).

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Special AMA meetings

A series of special meetings for packaging executives has been scheduled by the American Management Assn., to be held in its New York headquarters between early summer and next January.

Designed for the exchange of ideas among the men responsible for packaging management in companies throughout the United States, the meetings are being planned by A. K. Thorn, manager of AMA's packaging division, and John A. Warren, technical adviser to the division, in collaboration with the association's advisory packaging planning council.

First of these will deal with ways of reducing waste on powder and liquid filling lines to eliminate excessive overfills. A three-day small-group program designed for users of filling equipment will study methods that have brought sizable economies for food, brewery, oil and other companies. Specific topics will include training of line operators and supervisors in weight-control methods, statistical quality control, use of check-weighing and X-ray equipment, the particle-control method and the basic types of powder and liquid filling equipment.

The second session, planned for the fall, will cover economics of packaging machinery and will be limited to approximately 50 users of packaging equipment. Included on the program will be discussions on planning equipment capacity in relation to marketing; specifications for equipment purchases; development and training of supervisors; industrial relations and job classifications for operating-line personnel; ways in which machine manufacturers can better serve users; factors in purchase and replacement, and layout of packaging lines.

Supplementing this meeting will be a three-day program dealing with the auditing of machine performance, with sessions planned to aid operating personnel in anticipating trouble before it happens and locating causes of trouble quickly. Later in the year, a special three-day meeting for close to 100 specialists in various aspects of packaging will discuss packaging as a management function.

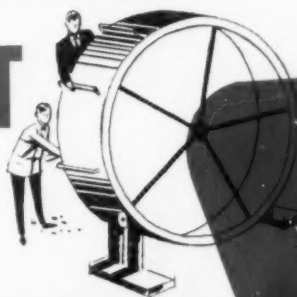
The last of these special AMA sessions will be a two-day meeting covering formulation of clear specifications for packaging supplies and quality control for incoming materials.

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Proxseal 19-231A is applied to clay coated and patent coated boxboard, tag stock, and cover papers by conventional varnishing machine procedure. It's put on right over the printed matter, is transparent, colorless, odorless, tasteless, and non-toxic.

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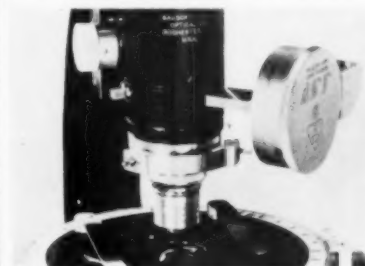
Pyroxylin
PRODUCTS, INC., CHICAGO 32

*T.M. Reg. U.S. Pat. Off.

218

To measure strain

A new method of measuring the amount of strain in glass and plastic containers was announced recently. This can be of importance to manufac-



turers of these items, since many types of rigid food containers must be free of strain in order to prevent breakage during rapid temperature changes.

Known as an accessory slot compensator, the device is attached to a microscope to measure the "birefringence" of the test material. Determination charts are then used to obtain readings, with determinations correct to plus or minus 2% said to be possible by direct readings in millimicrons from a scale engraved on a rotatable drum. Retardations from 0 to 2,700 millimicrons can be measured, with no computations or conversion tables being necessary.

CREDIT: Accessory slot compensator by Bausch & Lomb Optical Co., 635 St. Paul St., Rochester 2, N. Y.

SPI label awards

The Society of Plastics Industry Award for the most informative label identifying a consumer product made of plastics has been awarded to American Cyanamid Co. for its Melmac dinnerware tie tag.

Honorable mention went to six companies for the excellence of their informative labels. These were: Housewares—Federal Tool Corp., Chicago, for a breadbox label; Alladin Plastics, Inc., Los Angeles, for a utility basin label. Home furnishings—Arnel Plastron, Inc., New York, for a booklet giving instruction in sewing Ultron plastic; Firestone Plastics Co., Pottstown, Pa., for a Velon curtain label. Miscellaneous—Resins Industries, Inc., Los Angeles, for labels on a plastic sprinkler and a plastic hose; Interchemical Corp., Cotan Div., Newark, N. J., for a Cohyde baggage label.

The judges included Betty Pepis, the *New York Times*; Guin Hall, the *New York Herald Tribune*; Lois

MODERN PACKAGING

Maxon, the *New York World Telegram and Sun*; Dr. George Wham, *Good Housekeeping*; Carol Bick, *Tide*; Mary Davis Gillies, *McCall's Magazine*; Julien Elfenbein, *Haire Publications*; William Burston, *National Retail Dry Goods Assn.*; Lloyd Stouffer, *MODERN PACKAGING*; E. Bradford, Jr., *Variety Store Merchandiser*, and Ben McCready, *Playthings Magazine*.

Grass in polyethylene

A new processing and packaging method used by Turfgrass Farm, Tucson, Ariz., is said to have drastically reduced the shipping weight of an unusual product for growing grass. Called Meyer Z-52 Zoysia, it makes



it possible for a lawn to be grown from the highly perishable roots of grass, other than from seed.

Instead of shipping the roots as "plugs"—tufts of grass, roots and earth—the bare roots alone are sent in a duplex bag of polyethylene and mesh. Using this package, the company reportedly can ship a 24-oz. quantity of roots that represents an amount of grass weighing 28 lbs. under the old method of shipment.

The roots are first packed in bags of 1½-mil polyethylene film that allows them to "breathe," then in an outer open-mesh bag for added protection and ease in handling. Turfgrass says that grass packaged in this new fashion will keep alive for 30 days in a cool area, for 60 days in a refrigerator. A \$10 package is said to provide enough sprigs of grass for 125 sq. ft. of lawn.

CREDIT: *Packaging by Chase Bag Co., 309 W. Jackson Blvd., Chicago 6.*

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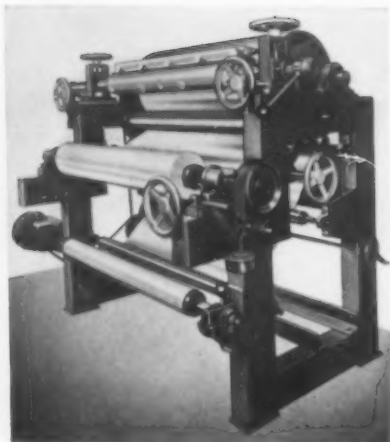
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HOW TO PROCESS POLYETHYLENE for printing or gluing

Treatment of polyethylene film, tubes, bottles or coated paper with the Kreidl Process gives packagers, extruders, and printers a simple, low cost method for making the surface receptive to both ink and adhesives. Patented under USP 2,632,921, this is the heat and flame process for treating polyethylene.

More than 70 licensees are enjoying these advantages:

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Welch Awards for 1954

Bronze plaques were awarded on May 11 to the two winners of the Charles S. Welch Packaging Award for 1954, at a luncheon meeting during the 20th annual convention of The Toilet Goods Assn., held at the Waldorf-Astoria Hotel, New York.

The "Ishah" line of perfume, toilet water and dusting powder, introduced

presented the plaques to the two winners, announced that this year's event will be the last in the series of Welch Award competitions.

Over-all theme of the T.G.A.'s convention was a survey of the past, present and future of the toilet-goods industry. Several of the speakers pointed to the strides which this field has



CHARLES OF THE RITZ'S "Ishah" line (left) won the Welch Award for best package design in the more-than-\$1 category. Dorothy Gray's "Figurine" packages were named best in the \$1-and-less classification.

by Charles of the Ritz, Inc., New York, was judged the best group of packages for products designed to sell at a retail price of more than \$1.

The award for the best package for a new product retailing at \$1 or less went to the "Figurine" line produced by Dorothy Gray, Ltd., New York, consisting of cologne, cream sachet, cream deodorant, hand lotion and combination cologne and hand lotion.

Judges who picked this pair of outstanding toilet-goods packages were Mrs. Kay Jamesson, former executive director, The Fragrance Foundation, Inc.; Michael Meisler, cosmetic buyer, Saks Fifth Avenue, New York, and William V. Toffey, Jr., editor, *Drug Trade News*.

S. L. Mayham, executive vice president of The Toilet Goods Assn., who

made in adding convenience features to its packages and predictions were made that non-breakable containers, single-unit cosmetic dispensers, low-pressure aerosols and lighter, smaller packages of all kinds would be among the growing packaging developments in the toiletries industry in coming years.

CREDITS: Charles of the Ritz—Cartons and printing by C. H. Forsman Co., 318 W. 39 St., New York 18. Bottles by T. C. Wheaton Co., Millville, N. J. Closures by Flyndustries, Inc., 141 E. 44 St., New York 17. Set-up boxes by E. N. Rowell Co., Inc., Ellicott St., Batavia, N. Y. Dorothy Gray—Bottles designed by L. S. Utley, 72-26 Loubet St., Forest Hills, N. Y., and produced by T. C. Wheaton Co. Cartons by Arnold Printing Corp., 115 W. 27 St., New York 1.

Housewives' complaints on pre-packaged meats

Housewives are not entirely happy with present pre-packaged meat, according to a recent study by the Agricultural Extension Service of the University of California.

Most common complaints turning up in 3,000-odd interviews had to do with paperboard trays now in use, with some women saying that pack-

aged meats sometimes take on the flavor of the paperboard and others claiming that these trays are often used to hide bones or fat. Many of the housewives said they would prefer an all-transparent package. Among other suggestions frequently made were that packages be dated and a greater variety of sizes be offered.

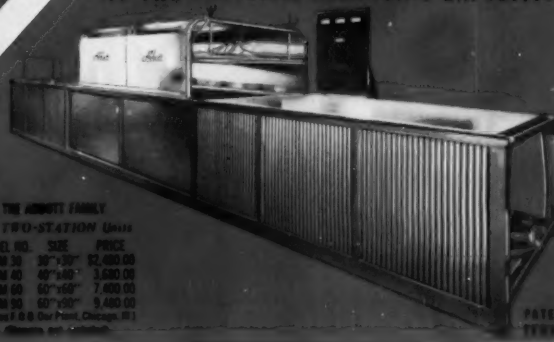


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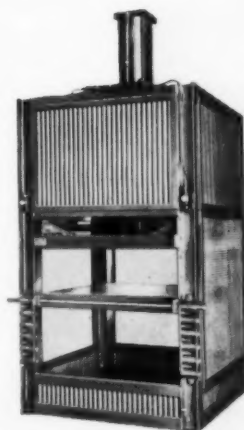
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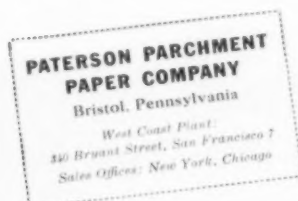
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Test-method revisions

Several revisions of the testing procedures for various packaging materials and containers are being considered by the American Society for Testing Materials.

At a meeting of ASTM's Committee on Packaging, held April 21-22 at the U. S. Forest Products Laboratory, Madison, Wis., 80 committee members discussed test methods in the fields of vibration testing, the revolving-drum test, stacking and drop testing. Other topics covered at the session were definitions of terms, testing procedures for water-vapor permeability and tests for interior packaging, according to R. F. Uncles, American Cyanamid Co., committee secretary.

Reason for the committee's interest in re-evaluating test procedures is said to be the considerable variation noted in results of tests conducted at different laboratories.

G. E. Falkenau, E. I. duPont de Nemours & Co., Inc., is chairman of the committee and E. R. Stivers, Package Research Laboratories, is vice chairman, with the 101 members representing a broad cross section of American industry and Governmental research units.

Does she really care?

(This article continued from page 98) friends; all said they liked screw cap well enough to pay 5 cents extra.

- Thinks glass jars with pry-up tops are dangerous, especially on baby food; small particles of glass could get in food.

- Nearly every time she opens a jar with a pry-up lid, the glass either cracks or chips off and she has to throw away entire contents.

- Used three different implements before getting a pry-up lid open.

- Usually pry-up lid bends, then won't fit tightly without banging it on.

- Paying one cent more for a screw-top lid saves quite a bit of money in the long run, because pry-up lids don't stay on tightly and food spoils.

- Saves screw-top jars for leftovers, throws pry-ups away.

- If buying a large jar, she would pay more to get a screw top; if it's a small jar and food will be used right away, it doesn't matter about the top.

- The screw top is a definite advantage on picnics and outings.

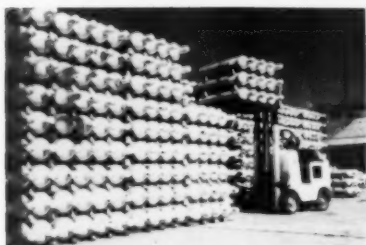
- Husband will not let her bring pry-open jars into the house; he uses

jars for nuts and bolts in his workshop and likes the screw lid best.

From the foregoing, all packagers can draw some significant lessons: (1) The average housewife is not unaware of differences in package convenience features and will not hesitate to switch to the brand which offers her an advantage in that respect; (2) the majority want convenience badly enough to pay a premium for it; (3) proper storage of unused portions of packaged foods is a perennial home problem and (4) re-use value of the container is still a consideration.

Unit-load cylinders

A novel system for handling the heavy 145-lb. cylinders used for compressed gas has been devised by General Chemical Div., Allied Chemical



& Dye Corp., New York. Instead of being handled individually, as was formerly done, the cylinders are now being stacked in "unit loads" of eight, 12 or 24 for faster, easier shipping from producing to distributing points. Thus, says General Chemical, cylinders now arrive in customers' plants in "factory fresh" condition.

To form one of these unit loads, a group of cylinders is stacked horizontally in tiers, separated by pairs of notched 2-by-4-in. wood spacers to increase rigidity and prevent chafing. The cylinders are banded together with standard steel strapping and a layer of protective paper is placed between the band and the cylinder.

At present, a single unit load consists of either eight or 12 53-in. cylinders or 24 25-in. cylinders, with a total weight of from 1,100 to 2,500 lbs.—well within the handling capacity of the average fork-lift truck. General Chemical ships refrigerating gases in this fashion from its plant in Baton Rouge, La., to distributing stations in all parts of the country.

Scuffing and denting of cylinders has been greatly reduced with the new method of handling, says the company, and the heavy cylinder in-transit damage which occurred when

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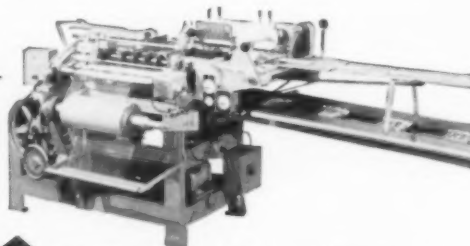
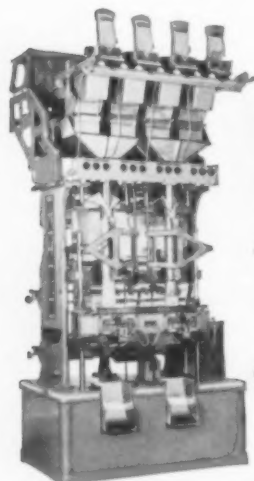
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they were shipped in upright position has been completely eliminated. Handling of the cylinders is also said to be faster and more efficient, with tier stacking adding materially to warehouse storage capacity.

Machinery research big

About seven cents of every dollar of packaging machinery sales is plowed back into the research and development of new and better packaging methods. So said a report released at the semi-annual business meeting of the Packaging Machinery Manufacturers Institute, held recently in Chicago.

This amount is said to be well above the average expenditure for research by the machinery industry in general and, according to PMMI officers, indicates a "healthy attitude of the members in furthering the growing trend toward providing a continuing source of increasingly efficient equipment."

The Institute's figures also show that orders and shipments of packaging machinery in 1954 were 12% higher than those of the previous year, with the reported backlog of unfilled orders on last December 31 being the highest of any period since industry statistics have been collected.

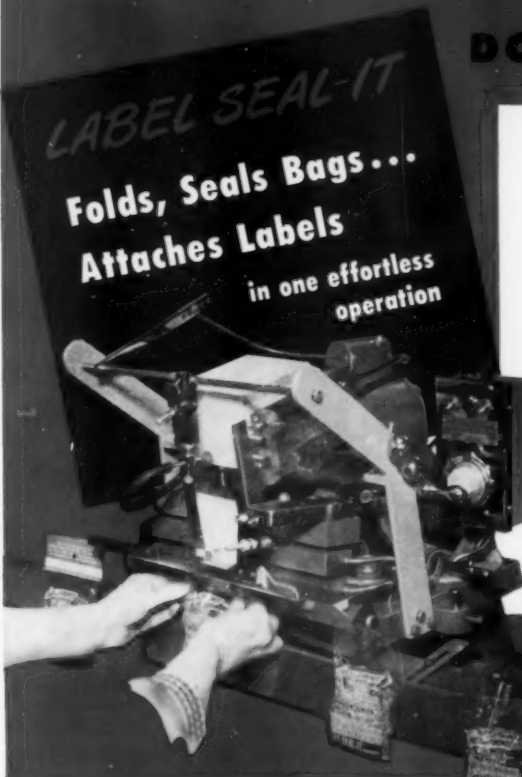
Representatives from more than 60 member companies attended the semi-annual meeting. Speakers included Reuben D. Cahn, business analyst, *Chicago Tribune*; A. K. Thorn, American Management Assn.; Boyd H. Redner, Battle Creek Wrapping Machine Co.; John B. Wilson, Wright Machinery Co., and Kenneth B. Hollidge, Arthur Colton Co.

Steel containers

Close to 100 million new steel shipping containers were produced last year, according to figures compiled by the Steel Shipping Container Institute.

Four basic industries—petroleum, chemicals, foods, and paints and varnish—accounted for the major share of steel-drum and pail consumption. The petroleum industry remains as the largest single consumer of light and heavy steel drums, taking 46% of production, while paint and varnish makers comprised the largest group of steel-pail users.

Divided according to size and type of product, the 1954 output was: containers 13 gal. or larger made from



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19-gauge or heavier steel, 22 million; containers of this size in 20-gauge or lighter steel, 8 million; and smaller containers (pails), 67 million.

These figures are published in the Institute's 1955 Directory, which also includes a listing of the plants operated by its members. In addition, the directory describes the new developments in steel-container construction currently receiving much attention, particularly the newer types of coatings and linings.

Prize-winning set-ups

(This article continued from page 127)
tions: Oscar Trilsch Co., for perfumes purse box for Mary Chess, Inc., and George H. Snyder, Inc., for Rubinstein's Beauty Course box for Helena Rubinstein, Inc.

Best Display Box:

First Award: The Mason Box Co., for Jewelled Match Box display for The D. Jacobs Sons Co. A gold-trimmed, easel-backed display holding five boxes, making it possible for any or all of them to be shown in open position. *Second Award:* Cherokee Paper Box Co., Inc. (see under *Hosiery & Wearing Apparel Accessories* above). *Honorable Mentions:* I. A. DeLine Paper Boxes, Inc., for fishing-lure display box for Hank Roberts, Inc., and F. N. Burt Co., Inc., for Black Sheep men's toiletries box for Avon Products, Inc.

Best Transparent Box:

First Award: Consolidated Paper Box Co., for mandrel box for Bacon Felt Co. A shoulder box covered in blue glazed paper with acetate lid, holding 24 mandrel-mounted felt wheels securely; bottom section acts as sturdy holder in actual use by purchaser. *Second Award:* Dennison Mfg. Co., for acetate watch-band box for Jacques Kreisler. No Honorable Mention.

Polyethylene outlook

Consumption of polyethylene for film packaging this year should top 100 million pounds, a 50% increase over that of 1954, according to T. W. Sharp, manager, Flexible Packaging Materials Div., Bakelite Co. He predicted also that by 1960 the expansion of self service into new markets may push polyethylene film consumption as high as 300 million pounds.



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Soaps and cleansers

(This article continued from page 112) problems all its own. Because of its relatively low price, the percentage of cost which goes for packaging is quite high, ranging in the neighborhood of 50%. This means that the packages for soap bars have usually been simple in form—glassine and printed paper overwraps, small folding cartons. Newer variations of these traditional packages are in the works, with several companies experimenting with different sorts of laminations.

Two of the more interesting new packages are being introduced by Lever Bros.: a new gold foil wrapper for its Lux toilet soap bar and a folding carton overwrapped in foil to be used for Dove soap, the company's new luxury toilet bar. A number of other foil-wrapped packages are reportedly in the testing stages. Foil is being used both for the sake of better appearance and to prolong the life of the perfume used in the soap.

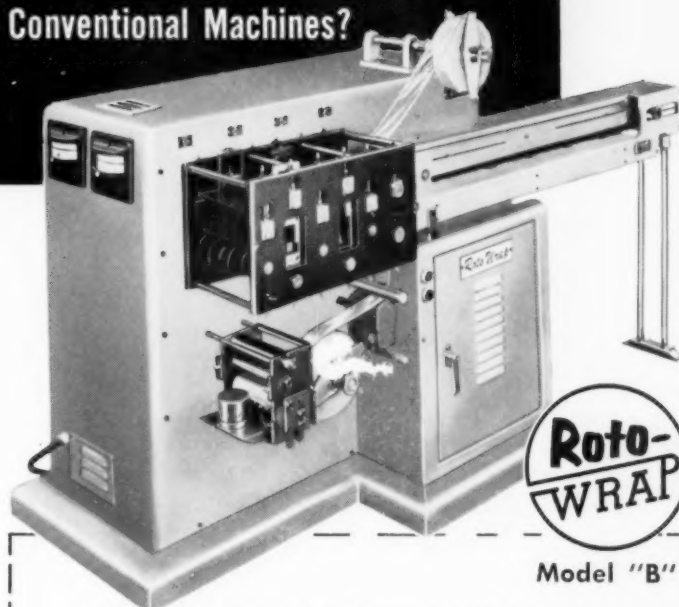
Merchandising of toilet soaps currently is aimed at increasing the size of the unit sale, either by giving heavy promotion to the larger-sized bars, or by selling bars in multiples, such as the long-familiar "one-cent" sales used for Woodbury and other soaps. Most popular techniques for combining more than one bar have been to use bands or cellophane or paper overwraps for several small bars, or even to package a number of wrapped or unwrapped bars in a polyethylene bag.

Product-wise, the greatest change has been the advent of "deodorant" soap, highlighted some years ago by Lifebuoy and more recently by the sensational rise of Armour's "Dial." One of the latest entries in the toilet-bar race, Dial now claims to have highest sales of any bar in the toilet-soap field. This brand, incidentally, is said to be packaged in as many as 25 different sizes today—showing the extreme package versatility needed to hit every possible market.

Another interesting new product, which may also have an important effect on the future market, is a synthetic detergent in toilet-bar form. This would have obvious advantages for consumers in extremely hard-water areas and is also said to let users "wash their faces with their eyes wide open," since it does not contain strong soap alkali. Colgate, Lever and P&G have all introduced toilet bars having

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detergent bases in test markets and other manufacturers may be expected to do the same if these prove successful.

Household cleansers

Recent years have seen widespread development of new chemical products especially formulated to do a multitude of specialized cleaning jobs for the housewife.* They are packaged in cans, paperboard cartons, glass jars and bottles, metal tubes and many kinds of plastic containers, depending on their physical properties and the uses to which they are to be put.

Most familiar of the cleansers are the household scouring powders, for which the traditional package has been the paper-body, metal-end sifter can, first originated by Old Dutch Cleanser some 50 years ago.¹⁰ Colgate's Ajax stole a march on its competition several years ago by being first to adopt a gleaming, protective foil label—highly practical for a package to be handled with wet hands. Ajax is now reported to be at or near the top in sales.

As with other cleansing products, the trend here, too, is toward the larger size. Both Ajax and Bab-O, another leading brand, have been introduced in canisters approximately one-third longer than the standard size and other similar packages can be expected.

A sifter-type dispensing package, however, cannot get very much larger and still be easy for the consumer to use. So it is not surprising to find cleanser manufacturers among those looking toward the carry-carton holding two, three or more cans as a practical means of increasing the unit of sale.

In addition to the scouring powders, there are many other products which are becoming increasingly popular with the housewife. She can buy cleansers especially formulated to do a good job of cleaning her walls, her floors, her windows. She can find products designed exclusively for her copper pots, her upholstery, her wall-paper.

This trend toward specialization in chemical cleansing products, a symptom of today's demand for "self-applying," "do-it-yourself" devices, means that a growing army of new packages is lined up for the passing

* See "Consumer Chemicals," MODERN PACKAGING, May, 1954, p. 113.

¹⁰ See "Old Dutch Cleanser," Packaging's Hall of Fame, MODERN PACKAGING, Oct., 1949, p. 112.

customer's inspection each time she walks through her supermarket. And



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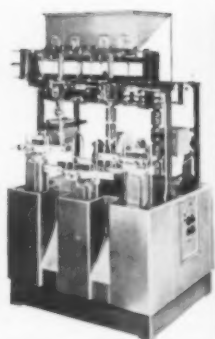
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customer's inspection each time she walks through her supermarket. And attractively packaged products, with labels that tell her instantly what they can do to make her housecleaning chore faster and easier, will be the first to win her attention.

Even such long-familiar household laundry aids as bleach, bluing and starch are participating in the changing pattern of American cleaning habits. Bleaches in powder form, packaged in paperboard cartons, are gaining in their competition with the established liquid bottled bleaches. Liquid starches, on the other hand, are the upstart rival to solid starch.

No type of cleaning product can expect to be long exempt from this hotly paced race to give the housewife a product in a form that is easier to apply in a package that is easier to use.

Summary

This review of what has happened in the soaps and cleansers industry in the past few years should convey valuable lessons to packagers of many sorts of products. For this industry is one of the most widespread of businesses—one whose packages reach into almost every single home in the country, for use not once but several times a day. It has used, in the main, the most elementary packaging forms, yet has been able to come up with a revolutionary kind of package improvement when the time was ripe. It has wisely employed packaging to bridge the rough spots as a tremendous change in the physical composition of its basic product has taken place. And it offers one of the finest examples of the use of the package in a white-hot battle of the brands.

Aerosol movie

"The Spray's the Thing," a new 13 1/2-min. animated color film describing the development of aerosol products, the way they operate and their existing and potential uses, has been released for public showing by E. I. du Pont de Nemours & Co., Inc.

Produced in compatible color for both black-and-white and color TV transmission, the film had its premiere before the mid-year meeting of the Chemical Specialties Mfrs. Assn. in Chicago last month and will be made available by du Pont to civic, business and educational groups for theatre and television use.



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Kon-tiki sailed a powerful way without paddle, steam or motor... simply went where the ocean and the winds were going. In business, the trick is to study the sales current, and ride with it. Like riding with the push of the plastics trend, right now.

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JUNE 1955

GCCI officers

The Glass Container Manufacturers Institute, Inc., elected Royden A. Blunt president at its recent annual



R. A. Blunt

meeting at The Greenbrier Hotel, White Sulphur Springs, W. Va.

J. P. Levis was elected first vice president of the GCCMI at the same meeting and F. W. McDonald was

named second vice president. Mr. Blunt, a native of Kokomo, Ind., began learning the glass business at the Pittsburgh Plate Glass Co. in Kokomo in 1912. In 1919, he became a department superintendent for the Corning Glass Works and eight years later was named general manager of the Buck Glass Co., Baltimore. He has since become vice president and, in 1947, president of the company.

Mr. Levis is chairman of the board of directors of Owens-Illinois Glass Co., and Mr. McDonald is vice president and general manager of Glass Containers, Inc.

Atom test results

First results are in on how well foods packed in tin and glass would withstand the blast of an atomic bomb, although detailed reports must await further study. As part of the recent test in Nevada, 908 cases and 3,802 uncased samples of food packages were exposed in a variety of different ways, at locations both close to and relatively far away from the actual blast.

From these tests, food experts hope to learn to what extent food packages and their contents may become radioactive and what limitations, if any, must be placed on the handling of the containers and the consumption of the contents. In addition, an extensive evaluation of blast effect on containers and packaging is planned.

Sampling of the foods exposed will be made to determine if any changes in taste, odor or flavor occur. In order to find out whether exposure of food-stuffs to high radiation flux may modify the nutritive properties or, in certain cases, even create toxic substances in the food, long-range animal feeding tests will be conducted with monkeys and rats.

Although reports on these findings

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must await completion, the Federal Civil Defense Administration, in special exercises, had arranged for industry observers to inspect conditions on the day following the blast and the visitors were permitted to make observations on conditions physically apparent. The observers, however, were not permitted to inspect the critical exposures nearer Ground Zero than 4,700 feet. At this distance and at greater distances from the shot tower the houses, industrial structures and rows of trailers had been placed. Observers report generally that the canned and glass-packed foods in these structures suffered less physical damage than some of the structures themselves. Food products in physically intact packages were found probably acceptable for use. Food products as close as 4,700 feet from Ground Zero were substantially free of radioactivity. Failure of packages was due principally to gross dislodgment from cupboards or from flying missiles; there was no bursting by blast overpressures.

At 4,700 feet, a one-story house of pre-cast concrete slab remained standing, although windows were blown out and furnishings crushed and twisted. Canned and glass-packed foods had been exposed here in kitchen cupboards, which had been slightly loosened, but not dislodged. The food packages remained on the shelves and, though slightly disarranged, appeared intact. No bulging or breakage from blast occurred.

At 5,500 feet, a farm house had been badly scorched on the side facing the blast, its roof torn off and windows blown out. Cases of foods in the basement of this house were apparently undamaged, although some were thrown from shelves to the floor. Canned and glass-packed foods in the kitchen cabinets also were partially toppled to the floor. A special "Grandma's Pantry" exhibit which had been stored in the area under the basement stairs came through very well. "Grandma's Pantry" was a special assembly of emergency foods selected with the idea of providing essentials to care for a family over a three-day emergency period. About 300 cans, representing about 30 different commodities, were included.

At 6,800 feet, an industrial building of heavy-gauge-metal construction had damaged roof and sides and the windows blown out. The exposure of canned and glass-packed foods in this

building was one of the tests of these foods under retail conditions, both cased and uncased on shelves.

At 10,500 feet, the canned foods in a kitchen cabinet with doors in a one-story house of pre-cast concrete were undamaged and the doors of the cabinet remained intact.

Reports of performance of surface exposures are not yet complete. A pallet load exposed in the open at 4,700 feet was found scattered, with some of the cases ripped open and the cans strewn on the ground.

A number of segments of the food industry participated in the tests, including the National Cannery Assn., the Can Manufacturers Institute, the Glass Container Manufacturers Institute, Inc., the American Meat Institute and the National Assn. of Frozen Food Packers. Also participating were the Food and Drug Administration and the U. S. Department of Agriculture.

Kraft's cheese cups

New kinds of transparent re-usable cups have been adopted by Kraft Foods Co., Chicago, for two of its cheese products. For five different



varieties of cream cheese—plain and with chives, pineapple, pimento and olives and pimentos—Kraft is now using a heat-resistant glass cup, suitable for oven use (left), to hold a 5½-oz. portion of the product. Each cup is topped with a snug-fitting polyethylene cover, brightly printed with the product name. This package is used in addition to the conventional 6-oz., foil-wrapped wedge.

Kraft's Blue Chip cold-pack blue cheese, which was formerly put up in 4-oz., foil-covered rolls, is now coming onto the market in another type of re-usable cup, a polyethylene container, topped with a snug cap of polystyrene, which is imprinted in red and blue on a white background.

CREDITS: "Pyrex" cream-cheese cups by Corning Glass Works, Corning, N. Y., with polyethylene caps by Massachusetts Plastic Corp., Ludlow, Mass. Polyethylene cups and polystyrene caps for blue cheese by Buckeye Molding Co., Miamisburg, Ohio.

JUNE 1955

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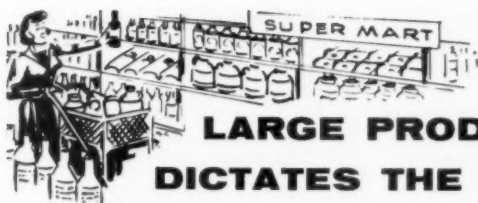
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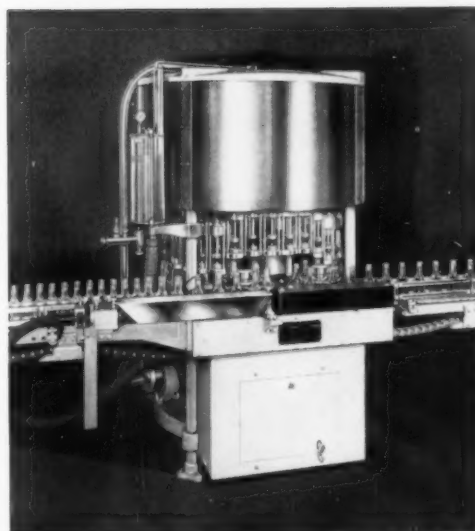


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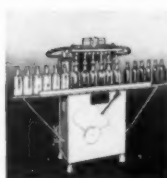
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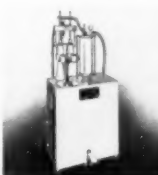
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